

# THE CULTIVATOR.

NEW

"TO IMPROVE THE SOIL AND MIND."

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## USE OF BONES AS MANURE.

It is now 40 or 50 years since bones began to be used extensively as a manure in Europe, and within the last 20 years immense quantities of them have been applied to the lands of England and Scotland, by which means tracts have been brought into profitable cultivation which were before entirely unproductive. Bones have, indeed, been exported in no inconsiderable quantities from our own country to Great Britain, and there made to yield the means of support to a manufacturing population, the products of whose labors have been returned and purchased by us.

If bones can be made thus useful to the British farmer, it is reasonable to believe that their proper application would be attended with useful results here. In the older settled and most populous parts of this country, there is a scarcity of manures, and a constant demand for such as can be advantageously used. Hence we think a knowledge of the proper preparation of bones and the best mode of applying them would be of great utility. We have on a previous occasion, alluded to an article on this subject, by Prof. F. W. JOHNSTON, published in the Transactions of the New-York State Agricultural Society, for 1847, and we think our readers will be benefitted by a careful perusal of the following extracts. In regard to the preparation of manures with a view of meeting the special wants of various soils and crops, Prof. J. thinks chemistry will by-and-by be able to direct; though he thinks it probable that "quackery will for awhile beset the steps of the farmer, and defective knowledge, especially of practical agriculture and of physiology, will lead the chemist astray." Nevertheless, the result, he believes, "is sure of being accomplished at last." In the mean time, he advises that we have "perfect faith in the science herself, while we, at the same time, exercise a reasonable distrust towards those scientific men who profess to know all, and to be able to do and to explain everything."

The essay of Prof. J. is quite elaborate, and goes fully into detail, in regard to the composition and uses of bones as manure. It is divided into ten sections, of which we give the following, which comprises the most essential parts.

**COMPOSITION OF BONES.**—Bones differ slightly in composition in different animals; they vary also with the age of the animal and the part of the body from which they are taken. The following composition of the bones of the cow will represent very nearly that of the bones which are usually applied to the land.

Organic Animal Matter (gelatine),...	33½
Phosphate of Lime,.....	55½
Phosphate of Magnesia,.....	3
Carbonate of Lime,.....	3½

Soda and Common Salt,.....	3½
Chloride of Calcium,.....	1

100

When bones are burned in the open fire, the animal matter they contain—the gelatine—disappears, and the white *bone earth* alone remains. These two portions of the bone, the combustible or organic, and the incombustible or inorganic part, are equally essential to the fertilizing action which the bones produce. As some inexperienced writers have disputed this in regard to the organic part, it will be proper briefly to advert to its composition and mode of action.

**COMPOSITION AND MODE OF ACTION OF THE ORGANIC PART OF BONES.**—The gelatine of bones consist of,

Carbon, .....	50.37
Hydrogen,.....	6.33
Nitrogen, .....	17.95
Oxygen, .....	21.35

100.

It is identical in composition with horn and with isinglass, and is very nearly the same as hair, wool, and skin. It is of importance to recollect that it contains about 18 per cent, or one-sixth of its weight, of nitrogen.

That this organic part is *likely* to act beneficially as a manure, is rendered probable by the fact, that horn shavings are highly valued as an application to the land, and that the parings of hides and woollen rags bring a high price in the market as manures for certain crops.

But that it *does* act beneficially is proved by the success which attends its use, when separated from the earthy part of the bones. In Manchester, bones are boiled for the extraction of a size (glue,) which is used in the stiffening of calicoes. When the stiffening liquor is so exhausted as to be unfit for farther use, it has been applied as a liquid manure to grass-lands, with the greatest success. There can be no reasonable question then that upon the organic part of bones, their beneficial action as a manure in some degree depends. It is only surprising that chemists of name should have been found to deny it, and that practical men should have so far distrusted their own experience as to have believed and acted upon such an opinion.

But how does this organic matter act? It no doubt feeds the plant, but it may do this in one or other of two ways. It may either be completely decomposed in the soil, and enter the roots of plants,—as Liebig supposes all organic nourishment to enter—in the form of carbonic acid and ammonia; or it may be rendered soluble in the soil, and may thus be taken up by the roots, without undergoing any ultimate and thorough decomposition.

Now, supposing it to be resolved into carbonic acid and ammonia, the quantity of gelatine contained in 100 lbs. of dry bones is sufficient to produce upwards of  $6\frac{1}{2}$  lbs. of ammonia, as much as is present in 20 lbs. of sal ammoniac, or in 30 lbs. of crystalized sulphate of ammonia. Supposing the animal matter of the bones to be thus decomposed in the soil before it can be useful to the plant, few, I think, will question that the quantity of ammonia it is likely to produce would materially aid the growth of the crops to which bones are applied.

But I do not think this final decomposition necessary. The large quantity of nitrogen which the gelatine contains, may, I believe, be taken up by the plants without being previously brought into the state of ammonia. The gelatine being rendered soluble in the soil, may enter the roots and may at once minister to the growth of the plant, just as the gluten of the seed, being rendered soluble when the grain germinates, ascends with the sap, and feeds the young plant. It would be out of place here to discuss this point, or to give the reasons which induce me to entertain this opinion. It is sufficient for the practical man to know, that which ever of these views a man may hold, he must still grant that the gelatine of the bone is valuable to the farmer. Whether its nitrogen enter into the root in the form of ammonia or in some compound state, it must be useful to the plant, and, therefore, he who advises the farmer to burn his bones, or would persuade him that the earthy part alone, or *anything equivalent to this earthy part* would alone be as useful to his land as the entire bone, advises him to his hurt, and would persuade him to that which would eventually be a source of loss.

**MODE OF ACTION OF THE INORGANIC PART OF BONES.**—The composition of the incombustible part of bones, the bone earth, has been given above. It consists chiefly of phosphate of lime, with about three per cent each of phosphate of magnesia, carbonate of lime and salts of soda.

All these substances, of which its bones consist, the Ox must have derived from its vegetable food. They must therefore be present in all fertile soils. And if a soil is poor in these substances, or is wholly void of them, that soil must be improved by the addition of these things. In other words, they must be invaluable as manures to such a soil; and hence the worth of bones to the practical farmer.

Sprengel long ago reasoned thus; and he asserted that the indications of theory were proved by experience—that burned bones actually fertilized the land.

Liebig followed him; but more boldly pronounced that the whole value of bones as a manure, depended upon, and was derived from the earthy phosphates they contained.

In the Appendix to my published *Lectures on Agricultural Chemistry and Geology*, and in my *Suggestions for Experiments in Practical Agriculture*, published separately, I suggested with the view of settling this question to the satisfaction of all, that comparative experiments should be made with burned and unburned bones upon the same soils and crops, and with quantities of each, which should contain equal weights of the earthy ingredients.

Numerous experiments were in consequence, made in various parts of the Island, few of them exactly fulfilling all the conditions which were necessary to secure accurate comparative results. Some of them are recorded in the Transactions of the Highland and Agricultural Society, others have been published in the different agricultural periodicals of the day. I do not quote any of them, for they are not all concordant, but the general results were these:

a. Bones under favorable conditions, seldom fail when applied alone, in raising an average crop of turneps.

b. Burnt bones laid on alone, and in a quantity equivalent to that of ordinary manuring with bones, don't always succeed in raising an average crop of turneps.

c. In some rare instances again, and upon some soils, burnt bones actually raised a larger crop of turneps than an equivalent weight of unburned bones.

Burned bones therefore, as theory indicates, are useful to the land. But the employment of unburned bones is the safer and surer. This greater security must arise from the organic matter they contain, and therefore this organic matter cannot be without its use. Therefore, also, an artificial mixture, which contains nothing equivalent to this organic matter, can never be made to perform all the functions of bones. If the soil already contains a sufficiency of organic matter—or if this be added in the form of farm yard or other similar manure—then burned bones, or artificial mixtures of a similar kind, will be sufficient to produce the usual effects of bones. But if organic matter be deficient, the entire bones will always be the farmer's surest reliance.

The adoption of this second view, is at present opposed by the notion which many have been led to adopt—that if plants can only obtain saline matter from the soil, they will draw organic food enough from the air. The ammonia of the atmosphere it is said, will give nitrogen enough to the plant—and thus, in the case of bones, their organic matter is useless, since the air will readily yield to the plant, what we suppose this organic matter to impart to the roots. But I believe the minds of our thinking men will soon be disabused upon this point; and that in a few years, this opinion will have found its long resting-place, among the other singular fancies, which, year by year, afford ephemeral occupation to the novelty-loving among our gentlemen farmers.

**METHODS ADOPTED FOR INCREASING THE SENSIBLE EFFECT OF BONES.**—Without referring much to the effect which bones might theoretically be expected to produce, it has been observed by practical men that they may be made to act more quickly and more beneficially by the adoption of certain previous precautions, such as,

1. *Reducing them to fine powder.* I have already alluded to the fact ascertained by experience that the finer the powder, the more immediate and the more sensible the effect of bones. But practical men were afraid to venture too far in diminishing the weight of manure, added to the soil. Bulk was considered to enter as an element into the fertilizing capabilities of any substance. Many leases even prohibit the addition of less than 16 or 20 bushels of bones, when used alone in raising turneps. But under the guidance of science, both tenants and proprietors will, by and by, learn to estimate more correctly what the crops really carry off, and what the soil therefore requires. Thus a strictly scientific economy will be established, and no more of any thing will be added to his fields than the farmer knows and *understands* to be necessary to maintain them in a state of permanent fertility.

2. *Heating the bones.* In some districts their action in hastening forward the young turnep, and bringing it quickly into rough leaf, where it is safe from the attacks of the fly, is increased by laying the bones in a heap, and covering them over with earth, for a week or ten days before they are drilled into the land. Left in this state, they heat, soften, and begin to change or decompose; and thus, when laid in drills near the seed, they are ready to furnish nourishment to the young plant as soon as the roots first thrust themselves downwards from the sprouting seed.

3. *Fermenting them with dung,* or the same decomposition is effected and carried further by mixing the bones with farm yard manure, and leaving the mixture



awhile to ferment. It was the result of trials made by thirteen different persons, and which are recorded in the Doncaster Report, that a given weight of bones, when mixed and fermented with farm yard manure, invariably produced a more beneficial effect, than the same weight of dry-bone dust, applied to the same crop and upon the same soil.

The advantage which results from these several methods, arises from the effects which they produce, either in diminishing the mechanical coherence of the particles of the bone, or in altering by incipient decomposition, the chemical state of the organic matter it contains. None of them, however, sufficiently effect these objects, though I do not doubt that fine bone-dust, fermented for two or three months with farm-yard manure, and occasionally turned over, would be brought into a condition more nearly approaching to guano in its fertilizing virtue, than any other form of bones which has hitherto been generally employed.

**DECOMPOSING AND DISSOLVING BONES BY MEANS OF SULPHURIC ACID.**—But another mode of preparing bones has recently been introduced, and for two or three years has been extensively employed as a part of the ordinary husbandry, especially by some of the Scottish farmers. This mode consists in decomposing, and more or less dissolving bones in sulphuric acid, (oil of vitriol.) This may be done in various ways, and the prepared bones may either be applied in a liquid state with a watering cart, or may be dried and sowed with a drilling machine, or broadcast, like ordinary bone or rape dust.

a. The bones in the form of bone dust, or where bone mills are not at hand, simply broken in pieces with a hammer, may be put into a cast iron, stone, earthen ware, or strong wooden vessel, mixed with half their weight of boiling water, and then with half their weight of the strong oil of vitriol of the shops, stirring constantly while the latter is slowly poured in. A powerful boiling up takes place, which gradually subsides.

By occasional stirring, the whole assumes the appearance of a thick paste, the pieces of bone gradually disappear, and after a week or ten days the whole may be taken out and mixed with a little charcoal powder, charred peat, saw dust or fine dry earth, to make it dry enough to pass through the drill, and may thus be immediately applied to the land. It would, however, be better to prepare the bones a month at least, before using them and lay them up in a heap for a while, with a view to their more perfect decomposition. When the pieces of bone are large, this is especially desirable, as otherwise they will not be fully decomposed without a larger addition of both water and acid.

b. Or the acid and bones as above, may, after a couple of days, be mixed with a quantity of light, friable soil, and laid up into a heap for seven or eight weeks, with occasional turning. The bones thus heat, decompose and dry up, so as to be ready for putting into the drills without further preparation. This method, however, requires more acid, and it is not unusual in employing it, to take equal weights of acid and bones. It may be, some practical men, indeed, employ invariably equal weights of acid and bones, while others are satisfied by mixing the bones with one-third or even one-fourth of their weight of acid. I would myself employ not less than a half.

c. Or equal weights of bones in the form of dust, of boiling water and of acid\* may be mixed together and occasionally stirred for a week or ten days, and when the particles of bone have nearly disappeared, from 50 to 100 times more water may be added to the mixture, and the liquid thus diluted may be applied by a watering cart. If it is to be used upon grass land in the spring,

or to young corn, it will be safer to dilute it with 200 waters, but fifty waters, (by weight,) will be enough if it is applied to the turnep drills. A common watering cart used for other liquid manures, will serve for the former purpose—for applying it to the drills, a very ingenious addition of tubes to this cart has been contrived by Mr. Wagstaff, and employed by him under the direction of the Duke of Richmond, at Gordon castle.

This method of applying bones in the liquid form, is, no doubt, the most perfect, but it is also the most troublesome and expensive, and may not, therefore, come so soon into general use, though it may ultimately prove the most profitable.

Instead of sulphuric acid, the muriatic acid or spirits of salt, has been, indeed was first, tried for the dissolution of bones, but the former appears at present, for several reasons, to be preferred.

**COMPARATIVE EFFECTS OF DISSOLVED BONES.**—The first experiments with dissolved bones were made in 1841 by Mr. Fleming of Barochan. The result is published in the appendix to my published *Lectures on agricultural Chemistry and Geology*, p. 28. He dissolved bones by means of muriatic acid and applied them to moss oats. In his report to me, published as above, he says: "I examined them a few days before they were cut, and was much satisfied with their appearance. The straw appeared as stiff and shining, and the ear was as well filled, as if it had been grown upon stiff loam, and I consider the same dressing, (he had applied it as a top dressing sown broad cast upon the young corn) applied to grain crops upon moss will insure a good crop and well filled oats." In 1842, he made many additional experiments, which he was kind enough to communicate to me for publication in my lectures. Those upon oats confirmed the results of 1841, but I quote only the following comparative results from the appendix, p. 8. The turneps and potatoes were raised with bone alone, without other manure.

*Produce from an Imperial Acre.*

	Dry Bone Dust.		Bones in Muriatic Acid.			
	16 cwt.	18 cwt.	4 cwt.	10 cwt.		
	Tons.	Cwts.	Tons.	Cwts.	Tons.	Cwts.
Swede Turnep,	14	17	—	—	18	11
Red Don Potatoes,	—	—	9	15	12	15

Both of these results, as I have observed, were greatly in favor of dissolved bones. In the case of the potatoes he found the produce a little augmented by the addition of wood ashes.

Since that time, numerous experiments with dissolved bones have been made in Scotland. In Fifeshire, crops of turneps have been raised at a cost of not more than 8s. or 10s. per acre. In Ayrshire, Mr. Tennant of Shields, as early as 1842, used as much as 200 bushels of bones on his own farm, prepared as above described, (b.) and he found 2½ bushels to be equal in effect to 2 cwt. Peruvian guano. In 1843, a premium offered by the Morayshire Farmer's Club caused numerous experiments to be made in that county. I have given an abstract of the very important results of these experiments in the 4th edition of my *Elements of Agricultural Chemistry*, p. 155, and the report has since been published in full in the Journal of the Royal Agricultural Society, p. 447. In 1844, the premiums of the Highland and Agricultural Society led to many other experiments; the results of which, made in different ways and upon different soils, are published in their Transactions for 1844. These general conclusions are,

1. That four, and in some cases, even two bushels of dissolved bones will produce as good a crop of turneps as sixteen or twenty bushels applied in the usual form. The crops also start more quickly and grow more rapidly.

2. That the more complete the state of solution or subdivision of the bones, the greater the effect. Hence,

\* A gallon of water weighs 10 lbs., a gallon of acid 17 or 18 lbs.

when applied in the liquid state, the benefit is most apparent.

DOUGHT ANY OTHER SUBSTANCES TO BE MIXED WITH DISSOLVED BONES?—Bones are known to exercise a comparatively feeble action upon stiff and undrained clays, and it may, therefore, be reasonably asked by some if the action of dissolved bones will be more certain upon such soils than the bones in their natural state? We may, I think, answer this in the affirmative, since the principal cause of the less conspicuous effect of bones upon such soils is to be found in their tenacity and coldness, by which the particles of bone are shut out from the air, and their decomposition is retarded.

But inasmuch as bones do not contain the whole of the substances which plants require, and as some of those which are present in bones, the salts of soda, for example, are in small quantity only, it may be reasonably asked again, if the dissolved bones would not be improved, and their efficacy increased, and rendered more sure, were an addition of certain substances to be made to them. Of this I think there can be little doubt, though the necessity and nature of such additions will depend much upon the nature of the soil to which they are to be applied. A small per centage of pearl ash or wood ashes, of nitrate of soda, or com-

mon salt, and a sulphate of magnesia—5 lbs. each of the potash and soda salts, and 10 lbs. of the magnesia salt to each 100 lbs. of bones—would render the mixture more suited to every soil and crop. At the same time, if the soil, like those formed from the felspar rocks, abound in potash, or like those which border the sea, be rich in soda, or like those which owe their origin to the slates, or to the magnesian limestones, contain already too much magnesia, any addition to these several substances would obviously be thrown away. The principle of adding such things being recognised as sound, the knowledge and discretion of the farmer must be exercised in determining how far such additions are likely to be profitable, or he may make a small preliminary experiment by way of trial.

In conclusion, I may remark that the more extended use of this mode of preparing manures—creating, as it must, an increased demand for sulphuric acid, and consequently for the raw materials from which this acid is manufactured—will exhibit another illustration of that intimate connection, which must always, in a healthy state of things, exist between the agricultural and the manufacturing and the mining interests, and of the certainty with which the advancement of these interests must lead to the greater extension and prosperity of every other department of the national industry.

### HABITS OF INSECTS.

The remarks of a correspondent of the *Cultivator*, under the head of "Spare the Spiders," suggest the importance of a knowledge of the habits of insects. The innumerable number of these, and the immense consequences depending upon them, are seldom properly considered. Many tribes attack the crops of the farmer, which fail more frequently from this cause than any other, except, perhaps, the effects of unfavorable weather. Famine and pestilence have at several periods ensued from their devastations in various parts of the Eastern Continent, and even in our own country, they have often occasioned great losses and no small amount of human suffering. The "staff of life" has been nearly cut off in many instances, by the attacks of that tiny depredator, called the Hessian fly, and its equally insignificant congener, the wheat midge. Various crops have been destroyed by the wire-worm, the cut-worm, and the grasshopper; our fruits have been blasted by the caterpillar, the canker-worm, the curculio, and the aphid; and even the trees themselves destroyed by the insidious workings of borers and worms. Other species, again, prey on our domestic animals, and some directly attack, annoy, and injure the human race.

The more we know of these formidable enemies the better we can protect ourselves against their ravages. And in this view of the subject, perhaps there is no one fact of greater importance than this: nearly every species of insect that is injurious to man, is preyed upon and destroyed by some parasitic or predacious enemy. However revolting, at the first thought, may appear this system of perpetual warfare among the tribes, it is evidently a wise and benevolent principle, calculated to preserve the proper balance in this department of organic life, and affording proof that

"Nature's differences are Nature's peace."

In regard to one of the most destructive insects to the farmer, the Hessian fly, (to which allusion has been made,) its natural enemies are an important check to its increase. "Other insects," says Dr. Fitch, "have been created apparently for the very purpose of preying upon this, and thus preventing it from becoming inordinately multiplied."

There are several species of these *ichneumons*, as they have been named, but one called the *Ceraphron destructor*, is the most common. It is a small bee-shaped insect, not much larger than the Hessian fly, and in the spring may be sometimes seen in great numbers in wheat fields; and the circumstance that it is often mistaken by farmers for the "fly" itself, strikingly exemplifies the necessity of understanding the economy of insects.

This ichneumon attacks the "fly" while in the "flax-seed" state, the latter lying dormant encased in a covering, which resembles in form and color, a flax-seed. It is between the stalk of wheat and the surrounding sheath. Instinct enables the ichneumon to know where its prey is lodged; it punctures the sheath, and deposits its egg in the body of the larva; the egg hatches and becomes a worm, which preys upon and destroys the larva of the "fly." It is thought by some naturalists, that at least nine-tenths of the larva of the Hessian fly are destroyed in this way.

Another very minute parasite of the Hessian fly, a species of *Platygaster*, according to Prof. Herrick, deposits its own eggs in those of the "fly." The latter hatch, and the worms pass into the flax-seed state with the young parasites in them, but they are destroyed before the next transformation is effected, and the parasites leave the shell.

Your correspondent before alluded to, has well illustrated the usefulness of spiders in destroying the troublesome house-fly, and in other respects. There are, however, several species of field-spiders which devour great numbers of crickets, grasshoppers, various kinds of moths, butterflies and beetles. If, towards the latter part of summer, we look at the surface of a meadow or stubble-field, early in the morning, while the dew is on and the sun is shining brightly, it will appear to be almost covered with spiders' webs. On examination, nearly every web will be found to have one or more of the above named insects in it, lately caught; and this ratio of destruction is carried on daily, through several weeks of the season.

The artful sagacity of the spider is in no case more



displayed than when a grasshopper falls into his net. The moment the spider discovers his game, he decides on his course, which must be governed by the relative strength of the parties. If the grasshopper is very large, compared with the spider, the latter, on the principle that "prudence is the better part of valor," instantly cuts the threads of his net as closely as possible to the trespasser, and lets him escape with as little damage as possible to the premises. But if the grasshopper is not too large, the spider soon stops his kicking by the numerous coils which he throws around him with astonishing rapidity, taking care to bind strongly, the long legs of his prisoner, lest by their use he should spring from the web, or tear it asunder in his struggles. The largest spiders make the strongest webs, and are generally able to manage any insects that fall into them.

But the spider finds a powerful and uncompromising enemy in several species of the mason-wasp. The latter insect is well known from forming habitations for its young of mud or mortar, which is attached to the underside of the roofs of out-buildings, and other sheltered places. The cells in which the young are hatched and reared, are from an inch and a-half to two inches in length; arranged parallel to each other, each distinct and separate internally, but attached together by their outward surface. There are sometimes from four to six of them in a row. When the earthen house is completed, except the closing of the upper end of the long cells, which is done by a single lump of mortar to each, the female wasp deposits an egg at the bottom of each cell, and then proceeds to fill the cells with spiders, which are plastered in, their bodies constituting the food of the young wasp during its larva state, or till it passes through its transitions, and comes out a perfect wasp.

No particular selection is made as to the species of spiders—any being taken that can be crowded into the cells. They are put in *alive* too, and the labor of incarceration is by no means inconsiderable. I have repeatedly witnessed the efforts of both insects on the occasion. Sometimes the spider was so large, that a little exertion of its legs would render it difficult for the wasp to thrust it down the cell; but the work was always accomplished, though the amputation of the spider's legs sometimes became necessary.

Other species of the mason-wasp fill their cells with worms, instead of spiders. Doctor Harris has lately described one, which he calls the potter-wasp, that fills its cells with canker-worms, which it thrusts in alive, "endwise,"—five "full-grown" ones being put into each cell. Dr. H. remarks that if the worms were killed before they were imprisoned, they would become putrid before the young wasps were hatched; and the same may be said in regard to the spiders.

All the mason-wasps are exceedingly bold and rapacious, and seize their prey with surprising celerity—pouncing upon it with almost the quickness of lightning, and disabling it by a single blow, or probably by a thrust of its venomous sting. The subtle art of the spider avails little against so powerful an adversary, and he generally yields on the first onset.

The large *blue-black* mason-wasp, with beautiful purple wings, attacks and kills the largest grasshoppers, crickets and cockroaches, besides occasionally showing his Herculean prowess in slaying the large black spider of the forest, whose fangs are like blacksmiths' pincers, and whose body, covered with bristly hairs, would be thought safe from the attacks of any common enemy. I once witnessed a combat between a mason-wasp and such a spider as I have just described. The spider, though vigorous and active at first, soon appeared as if struck with paralysis, and though not dead, could make no effort to repel its conquering foe. As soon as the spider ceased its exertions, the

wasp attempted to drag it under a piece of bark; but the weight was too great for the strength of the wasp—it could scarcely move the body of its victim.

Last summer, I saw one of the black mason-wasps, attack and kill one of the largest of the green-grasshoppers. By cutting off the grasshopper's long legs, he was quickly disabled. The wasp then excavated a hole in the ground, into which it rolled the carcase of the grasshopper, and buried it.

The aphid, or plant-louse frequently inflicts serious damage on the products and plants of the field and garden. Almost every kind of plant has its peculiar species of this insect. It possesses extraordinary powers of reproduction—*nine generations*, according to naturalists, being produced from a single impregnation. Their increase is therefore rapid almost beyond comprehension, and from only a few in the early part of the season, they soon swarm in innumerable numbers. All sorts of young fruit-trees, roses, and garden vegetables of different kinds, are sometimes overrun with them. They suck the juices from the fresh and tender leaves, which soon checks the growth of the plants—producing mildew and blight.

On the plants which are infested with the aphid, there is frequently seen various other kinds of insects, such as ants, flies, bees, the spotted lady-bird (or bug,) &c. Many people suppose that the object of all these insects is the same, that is, to feed on the plant or its juices; but their objects are only similar in one respect—all seek their food, though the food of the different races is quite dissimilar. All the aphid family excrete certain tubes through the posterior parts of their body, a sweet substance sometimes called *honey-dew*, of which many other insects are very fond. The ants, bees and flies are in search of this, and the former show great sagacity in obtaining it. They touch the aphides with their antennæ, which causes them to void the sweet drop, and it is instantly swallowed by the ants. From the constant attendants of ants in the manner described, the aphides have been called "the ants' cows."

The larva of the lady-bird, and the larva of several species of syrphidian flies, feed on the bodies of the aphides, and in many instances devour great numbers of them. Few farmers or gardeners are aware of the great benefit they derive from these rapacious little animals. The past summer, some currant-bushes and snow-ball trees were shown me that were literally covered with aphides. On close examination among the aphides I discovered a few of the larva of the lady-bird and a species of syrphus. As there were but few of these, I concluded they had but just discovered their prey. They continued to increase from day to day, and the aphides soon began to diminish, till in a week's time, scarcely one of the latter could be found.

Provided with a good magnifying-glass, I watched the movements of the aphid-eaters. The larva of the lady-bird and the syrphus, kept up a constant slaughter. The former seized the aphide with its long forceps, and soon sucked out their vitals, leaving nothing but a thin shell, which it threw away. One of them was seen to devour half a dozen aphides in the space of five minutes, and a similar destruction seemed to be kept up by all. The syrphus was attached to the leaf by a glutinous substance, in the midst of the aphides, from which position it constantly supplied itself with victims.

Had not this article been extended to (perhaps) an undue length, I would have given more particular descriptions of these predatory tribes. I trust, however, that what has been said may serve to show the importance of knowing the habits of insects, that we may, especially, be able to

"Distinguish which to slaughter, which to spare."

In a future number, I propose to give drawings of some of the species referred to.

W.

## ACTION OF MARL AND LIME.

**EDITORS OF THE CULTIVATOR**—In the article on "Manures—Their Nature and Action," in the June number of the *Cultivator*, an allusion was made to a mineral substance found in New-Jersey and farther south, and known as "green sand," which possesses very valuable properties as a manure.

I suppose it would be useless for me to say anything about marl. To all who are interested in it, it is already perhaps sufficiently well known. As stated in the article referred to, "its great value is chiefly due to the potash it contains."

But there is another mineral substance, which is found in a bed extending through a portion of the state from New Egypt to Vincentown, and is found I think, a few miles south of Haddonfield. I allude to what Prof. H. D. Rogers calls "a straw-colored limestone," but more particularly to the thin limestone stratum of the vicinity of Vincentown. This is not so well known nor so extensively found as the marl. Prof. Rogers' analysis of it gives "lime 49.69, carbonic acid 38.31, silica and other impurities, 9.00, water, 3.00—making about 88 per cent. of it carbonate of lime." In speaking of where the beds of limestone had been cut through, by digging a well into the green sand stratum underneath, Prof. Rogers says—"It was in thin irregular beds, separated by incohering sand and calcareous grains, similar to the mixture which composes the rock; its total thickness was about six feet; the organic remains are the same which characterize the limestone of Vincentown." It is now found in places from fifteen to more than twenty feet thick. But it is not the stone, to which I wished more particularly to call attention, but rather "the incohering sand and calcareous grains" by which its strata are separated.

If a test by effervescence with acid would be sufficient to judge by, I should suppose that this incohering sand contains nearly or quite as much carbonate of lime as the stone itself. If so, perhaps it may be called by way of distinction, pulverized limestone.

I suppose this bed of carbonate of lime was not placed there for nothing. In what way it may become useful to man, and to what extent? are questions of some importance. How far will pulverized carbonate of lime answer in the place of quick lime?

I think Liebig advances the idea in his *Chemical Letters*, that one of the most important uses of lime on land is, that by its caustic property, it may assist in disintegrating the soil, and rendering the alkalis, or potash contained in it, capable of becoming soluble in water, and thus taken up by the fibrous roots of plants requiring it.

And he illustrates this opinion by describing a plan for decomposing feldspar, a mineral which contains potash, and forms a component part of the most widely diffused of the primitive rocks. In this case, I suppose the carbonate of lime would be of but little use.

Yet some farmers who have been in the habit of using lime for many years, say they think a heap of lime, which has lain eighteen months or longer, and thus become principally carbonate, is quite as beneficial to the soil as one spread immediately after slaking.

It is known that almost all marls contain ingredients injurious to vegetation. These are principally copperas and alum. Although some contain a much smaller proportion of them than others; yet it is found that where land has been marled copiously for a number of years, a continued application of it, without lime, is

attended with but little beneficial effect, while the soil seems to acquire a strong inclination to produce sorrel. Prof. H. D. Rogers recommends as an antidote to the poisonous principles contained in marl, the use of "caustic or freshly burnt lime." Yet a simple experiment will show that carbonate of lime will decompose copperas or alum, as well as the caustic. Take a little pulverized copperas, and mix it with a similar quantity of this pulverized carbonate of lime. Add a little water to the mixture. The appearance of rust or red oxide of iron in the mixture, will show that the copperas (sulphate of iron) is decomposed; while the effervescence will as surely indicate that the sulphuric is taking the place of the carbonic acid; and the latter being set free, in escaping causes the effervescence. In a similar experiment with alum, in the place of copperas a like effervescence will as readily indicate a mutual decomposition. And a practical agricultural experiment would seem to accord with those of chemistry.

A strip of land which had been marled several times within the last twenty years, (but had received no lime) was covered with a few loads of this pulverized lime. Two years afterwards, the part of the field manured with the lime bore a good growth of clover, while the other portions of it were red with sorrel.

In Playfair's edition of Liebig's *Agricultural Chemistry*, it is stated, that "in China, the plaster of old kitchens which have no chimneys but an opening at the top, is so much valued as a manure, that they will sometimes put a new plaster on a kitchen for the sake of the old." And the reason offered for the increased value of the plaster, is "The ammonia contained in the fuel forms nitrate of lime with the lime in the mortar." Is there not a portion of ammonia continually escaping in the summer season from every body's barn-yard? Would not a small portion of carbonate of lime spread over the yard, be as likely to retain it, as the plaster of a Chinese kitchen?

In the *American Farmer's Encyclopedia*, article Bones, it is stated that the shells of the oyster, lobster, &c., contain a small proportion of phosphate of lime.

The pulverized portion of this limestone, was without doubt, formed by the decomposition of sea-shells.

Were the marine shells of ancient times composed similarly to those of the present time? or have they been subject to a change in composition? And if they once contained phosphoric acid, would they be likely to retain it through so long an interval? If this lime contains only a little phosphoric acid, those who make use of it need not be at the labor and expense of procuring bone manure for their land.

It is true, there is no mention made of phosphoric acid in connexion with this subject in Prof. Rogers' *Geological Survey*; but his analysis was only of the stone. Probably, the strata of stone were formed by the shields of some animalculæ, similar to the madripore, and perhaps contained no sulphuric acid; while the pulverized mass which separates them, may have been formed by the disintegration of bones and shells, which were thrown together by the currents of the ocean.

I cannot tell whether any of these speculations are correct; I only claim that the subject is an interesting one; and would be glad either to change my opinions, or be more confirmed in them.

H. GRATH, JR.

New Jersey, July, 1848.



## BUTTER FOR THE UNITED STATES NAVY.

You having given the substance of the article published in the Transactions for 1847, in relation to the manufacture of butter for the U. S. Navy, I doubt not it will be acceptable to the readers of the *Cultivator*, to peruse the annexed letter in relation to the subject from J. J. HAWLEY, of Binghamton. I endeavored to obtain the information contained in this letter, previous to the publication of the Transactions, but owing to misapprehension on the part of the gentleman to whom I wrote, I failed to receive it. Dr. A. DOUBLEDAY, however, on application to him, has procured it, and if anything was wanted, in addition to the facts already given, this letter supplies it, so that there can be no doubt whatever, that our state can in almost any section of it, furnish as good butter as *Orange County*—that will stand the test of tropical climates. Mr. HAWLEY saw butter which was made in *Broome county*, in 1840, and sold in New Bedford after having been a whaling voyage, and at the expiration of *nearly four years from its manufacture*, which was as sweet and in as good condition as when first made. But I refer to the very interesting details in the letter annexed.

B. P. J.

*Agricultural Rooms, Albany, August, 1, 1848.*

The idea that no butter made out of *Orange county*, will “resist the action of tropical climates and preserve its qualities for years,” is an utter absurdity. I think, that *not one-third* of the butter sold as “*Orange county*” is made in that locality. That county has during ten years past, sent out hundreds of emigrants to the counties of Sullivan, Delaware, Chenango, Broome, Tioga, Tompkins, Chemung, and perhaps others in the state of New-York, who have continued the manufacture of butter for market, and who, at the end of each season have been in the habit of transporting their butter in wagons across the country to the different points of shipment in *Orange county*, and there shipping it as from “*Orange county*.” Many of the persons had, for ten years before emigrating, regular purchasers in New-York for their butter, who it was understood were to take their product each year, when made, and pay the highest market price for it. These relations were in many instances, continued for several years, previous to their emigrating from *Orange county*, and many now continue them without the least objection being made to the quality of the butter.

The term *Orange County Butter* seems to be misunderstood. • • It does not mean (as I understand it,) the locality where made, but a peculiar method of manufacture, the perfect neatness and cleanliness of everything about their dairies—the churning the *milk* instead of the cream, and the attention to the quantity and quality of the salt used, are the principal peculiarities. The churning the milk I deem essential to butter intended for long voyages. It gives it a peculiar firmness and fineness of texture, and wax-like appearance, which butter made by churning the clear cream, seldom has. These peculiarities can generally be detected by the eye. There is also a cream-like flavor, in milk-churned butter, which I have never found in butter manufactured in a different manner.

I believe the highest price paid for dairies in New-York, for several years past, has been paid for several dairies from *Chemung county*. Being at the table of a certain well known *gourmand* in New-York, in the spring of 1847, I remarked the very fine quality of the butter—He replied that such butter could not be made

out of *Orange county*. The conversation continued, until finally the original firkin was brought up, when I found it was branded John Holbert, (Premium.) Mr. Holbert resides in *Chemung county*, and it will be recollected took the *first premium* at the State fair in *Saratoga*, in 1847, for butter made in June. This gentleman told me, he had his supply of butter of *this dairy*, for several years, of a particular grocer who alone sold it, at 33 cents per lb.

The opinion of the gentleman who has charge of the butter department of the U. S. Navy, “that no butter made out of *Orange county*, will resist the action of tropical climates,” I know to be erroneous. A dairy made in this county, (Broome) has been sent abroad much of the time for ten years past. In 1839 it was sold in St. Croix, to the Governor, for 75 cts. per lb. In 1840, it was sold in New-Bedford, and went a whaling voyage. I saw some of it after the expiration of *nearly four years* from its manufacture, as sweet, and in as good condition as when made. The same dairy has since been sold in New-Orleans, in Natchez, and Mobile, and there never has been any complaint as to its quality.

I shipped some butter, that was the product of this county, to Canton, in 1846, which, under very disadvantageous circumstances, opened as fresh as when made, and proved so good, that the shippers have each year since applied to me for butter for cabin stores for their ships. I broke up the original firkins and procured a quantity of small white oak kegs, which would contain from 15 to 25 lbs. each, and repacked the butter, selecting the best from a large quantity. These kegs, when filled, were put in very large hogsheads, and the interstices filled with rock salt, and the casks placed in the hold of the vessel. This butter when sold, (about eighteen months after its manufacture) was in as good condition as when made. The small kegs were not used in reference to the preservation of the butter, but merely for convenience in retailing at Canton.

The exportation of butter for the supply of the different cities, that are along the southern coast of Asia, is probably destined to be a very considerable business. The entire supply for the immense cities in the possession of the British East India Company being derived from Europe, (mostly from Ireland, but some little from Holland,) and it is usually purchased at home, at a price which would fully pay an American shipper at its destination.

The relative proportion of our county, that is adapted to the finer qualities of butter, is probably as small as any other article of general necessity. But much of the southern tier of counties, and also of the central and northern portions of the State of New-York will, (when well cultivated,) produce the various grasses necessary to give butter the peculiar flavor and aroma of *Orange county*, when properly manufactured.

The emigrants from *Orange county* before alluded to, all agree in opinion, that as good butter can be made in their new location as in *Orange county*. Minnisink is cited in the circular as being the locality producing the best butter in *Orange county*. A Minnisink dairy-woman in this vicinity, who had for many years the reputation of being one of the best in that town, made her first lot of about sixty firkins here last season, and says it was the best she ever made. All the *Orange county* emigrants agree in opinion, (and many of them are persons of much experience and close observation

in their business) that in favorable situations they can produce as much butter and of as good quality as in Orange county. Yours, &c.

J. J. HAWLEY.

Binghamton, July 24, 1848.

N. B.—It will be seen on reference to the Transactions for 1847, page 45, that at Washington, it is distinctly understood "that no butter can stand the test

of foreign climes, that is *not made in Orange county*," and this is what the gentleman connected with the Naval Bureau, understands by Orange County Butter. Mr. HAWLEY's explanation is what we understand by the designation of *Orange butter*—that which is rightly prepared so as to keep in any climate, and that it is not necessarily or in point of fact made solely in that county.

### MANAGEMENT OF BEES.

I have read much written on the subject of Bees, their management, the Bee moth, &c., with but little benefit. I think, (judging from my own experiments, as well as from trial of the recommendations of others,) that a different mode of operation, from what is generally laid down, is necessary to guard against the enemies of bees.

It will be unnecessary for me here to enumerate the many plans and inventions that have been sought out, to guard against the moth, but I would suggest a different plan; though I do not know as it will answer for any other place than the section in which I live. Other places may be far more troubled with them, but I would just say, if they are any worse in any other place than here, they must be bad enough; for few keep bees here but a short time before they are very much injured or entirely run out, if kept on the old plan. When I speak of the old way, I mean letting them swarm as often as they will, and putting swarms into hives by themselves, without any regard to their size or the time they come out.

Most people seem to think the greater number of hives they can count, the better *luck*, as they term it. Now from the experience I have had in keeping bees, a different course should be pursued in order to succeed well; and my own conclusion is not a hasty one, for I have kept bees about twenty years; though during several years of the former part of that time I did not succeed very well; for I used to manage upon the old plan, and at the same time tried many experiments with them, some of which did not succeed as well as I had anticipated; but during the last ten or twelve years I have realized my most sanguine expectations.

My plan is not to count my army by the tents they occupy, but by the working men in them. I have all my hives strongly peopled, that they may not only repel an enemy, but drive them away. When a hive is strongly peopled, none of their common enemies will attack or injure them;—at any rate, it is only weak hives that are attacked by the bee moth, or robbers. I never knew an instance of a strong hive being injured, unless some accident had happened to the comb.

I may be asked how I can have my hives all strongly peopled? It can be easily done, but it requires some experience as well as skill, to do it successfully; but in this the main secret lies. Nearly all the first swarms, which come out before the twentieth of June, will be sufficiently strong, and will not only make honey enough to winter on, but in good seasons will make from two to four boxes (of twelve pounds each,) of surplus honey, that can be removed without impoverishing the hives; but the second swarms need to be reinforced however, it frequently happens that a third swarm comes out so as to put one of them with a second swarm, which generally makes them large enough.\* The size of a colony will be better understood by measurement in a hive than any other way. My hives are twelve inches inside and sixteen high in the clear, and when the swarm all settles in the hive, I want them

two-thirds full at least; and when they fall short of this standard, I reinforce them till they come up to it. No fears need be entertained of their being too many bees in a hive, for the more bees the more honey they will make in the boxes. I have frequently had two of the first swarms go together, which have filled the hive of bees; such hives generally do best, and make far the most surplus honey; and are much better to go into winter quarters.

Hives frequently cast two and three swarms apiece, which reduces the stock in the old hive so low, that they are unfit for wintering; I let them cast their late and small swarms until all my swarms are sufficiently reinforced, and then, what comes out afterwards, I manage in the following way.

I take a small hive and set it on a table for hiving, put the bees in front of the hive, and start them in moderately, and with a goose quill separate them until I can find the queen, which I destroy. It is necessary to keep a close watch until they all go into the hive, for sometimes there are two or three, and even more queens, in second and third swarms, which, if not destroyed will remain in the hive, and not return to the one from which they came. If they do not go back by night, there is generally a queen left, and when that is the case, just at dark I take the hive and strike it pretty smartly on the table, and jar them out, and examine for another queen. The next morning they generally return to the parent hive.

Hives that have overswarmed themselves, are the ones the bee moths or robbers attack. Now these old feeble hives must be reinforced, or there is danger of their being destroyed by their enemies; or if they escape these there is danger of their dying in the winter in consequence of the want of warmth, being so few in number. It frequently happens that some of these over swarmed hives are old, and unfit for wintering. I take the bees out of such hives, to reinforce weak ones with. This should be done soon after the swarming time is over. With the hives that I have to reinforce, (when I have not old hives to reinforce them with,) I go to some of my strongest hives that have boxes on the top full of honey and bees, and take one or two boxes just as seems necessary, and put them on the weak ones, in order to make them sufficiently strong for wintering. The bees in the boxes hardly stir for a day or two, then they all agree and go on to work with renewed vigor.

I might here state that I never destroy any bees. Weak hives seldom ever quarrel with their new companions. In swarming time, different swarms seldom disagree, unless the first swarm has been a considerable time in the hive, and the one put with them a much smaller one. If they ever do quarrel, an easy way to stop them is to run a small wire in their hive, and just start the honey in their comb. The uniting swarms should always be done just in the dusk of evening, and by morning they will all be united, when the hive should be returned to its stand. Now I have but little hesitation in saying, that any one keeping bees, whose motto is, "strong hives or none," will have but little cause for complaint from the bee moth. LOTAN SMITH.

\* I sometimes put three and even four small swarms together.



## ECONOMY IN SAVING MANURES.

[The following article is the substance of a report on manures, read before the "Clinton Farmer's Club," by EDWARD NORTH.]

One of the great secrets of success in the culture of the soil, is *Economy*. This magic word is an "open Sesame" to wealth and independence. In order that the agriculturist may realize the largest profit from his labor and skill, he must be frugal and saving. He must be not more careful to avoid manifest extravagance, than he is to practice a system of rigid economy, which shall look in every direction Argus-eyed; and be applicable to every combination of circumstances.

He must save not only at the bung-hole, but also at the spigot, and thus arrest the injury wrought by those small dribbling losses, which viewed separately, appear of no account, while in the aggregate and the long run, they greatly diminish the returns of agricultural industry. In no department of rural labor, is there more to be gained by the exercise of economical ingenuity, than in the making, the saving and the using of manures. We are too much inclined, if I mistake not, to centre our regards upon the barn-yard, the stable, and the lime-kiln—too much inclined to place our main dependence upon these sources of fertilizing and stimulating agents, to the neglect of others not less worthy of attention. The different manures, and materials for creating manure, which may be secured and made available upon the precincts of every husbandman, are very numerous, and as valuable as they are numerous. Among the sources of manure frequently overlooked, or but partially drawn upon, may be mentioned the privy, the ash-bin and wood house; the hen-roost and pigeon-cote; the sink-drain and wash tub; the marl-bed and peat swamp; the gullies and forest.

All these are mines of wealth to him who tills the soil, and when brought into full requisition, they have proved instrumental in the production of crops before unanticipated and unknown. The amount of waste that is often permitted by overlooking these deposits of fertilizing substances, cannot be easily and accurately estimated. Yet a single calculation which I have happened upon in my agricultural readings may serve to throw some light upon this matter. "The solid and liquid excrements of a man may be estimated at 1.65 lbs. per diem, or about 614 lbs. per annum. Containing 3 per cent. or 18lbs. of Nitrogen, a sufficient quantity, according to Boussingault, to produce 880 lbs. or about 15 bushels of wheat." Report of the Commissioner of Patents for 1844, p. 384.

Now if a farmer's family consist of five individuals, and the contents of the privy are wasted, there is an annual sacrifice of enough nutrition for growing 70 bushels of wheat. This calculation was made by a distinguished French chemist, and may be relied upon as sufficiently accurate. But even if the contents of the privy were less valuable, by a half, than is here estimated, they ought still to arrest attention and provoke experiments with those who are solicitous to improve their farms and husband their resources.

The wasting of ashes is less common than that of bones. Yet the former are often suffered to lie in useless and unsightly heaps, when thrown from the leach tub; while the latter, of which every housekeeper may command a certain quantity, are seldom subjected to the process of burning and pulverizing, which converts them into an excellent manure. The chief constituent in the bones of all animals is the phosphate of lime, a substance absolutely necessary to the healthy vege-

tation of plants. The other principal ingredients are carbonate of lime and cartilaginous matter, both of which when decomposed, enter largely into the synthesis of vegetable substances. The cultivator of the soil will not be incredulous as to the power of vegetables to feed upon and digest the hard substance of crushed bones, when he is reminded that the ashes of wheat straw are composed of 61½ per cent. of Silica, or flint, which is much harder than the hardest bone." Loudon's Magazine of Gardening, vol. 2, p. 319.

By carefully gathering up, from time to time, what is deposited beneath the perches of the hen-house and pigeon-cote, one may not only improve the health and fecundity of his fowls, but may also enrich himself with home-made guano, scarcely inferior to that brought from distant foreign shores, which smells so rankly of money as to find but little favor with any but amateur farmers.

The amount of fertilization that is pounded and scrubbed out of our clothes in the course of a year, would probably startle one who should see it written down in truthful figures. The farmer or gardener who suffers the precious contents of the wash-tub to be thrown away and wasted, especially when his plants and trees are withering beneath the heat of the dog-star, has reason to reproach himself with the folly of "spilling at the bung-hole."

Monday is a day of great rejoicing to trees, and vegetables, when they are allowed to count on a thorough soaking about sunset, with rich saponaceous liquid, furnished by the laundress.

I have been told of a farmer, who after having suffered the wash-tubs to be emptied into a filthy drain, deliberately proceeded to deluge his pet garden sauce with ice-cold water fresh pumped from the well. I shall not credit the statement without further evidence. Sometimes it happens that peach stones or pear pits, get planted, either by accident or whim, hard by the kitchen door. Trees so situated, almost invariably prove thrifty and productive. Their bearing qualities and the exquisite flavor of their fruit, are extolled by individuals in private, and by committees in public. All the world wonders how it came to pass that trees which seem to have sprung from the soil without asking any body's advice or permission, and which should be so very healthy and prolific. The true explanation of this wonder, doubtless is, that the earth which such trees inhabit is fattened by the slops and dregs of the kitchen; and we are thus sharply rebuked for our want of economy in saving a species of manure so precious and so convenient. Nature herself is fond of elaborating manure, and as skilful too, as she is fond. If we were half as industrious and efficient, or were more willing to avail ourselves of her proffered assistance, we should less often be heard to complain of poor and ungrateful soils. The little stream that divides the pasture or meadow, is ever busy at its task in collecting aliment for grasses and trees. To the products of its inanimate industry we are always welcome. In the silent woods, again, nature is constantly accumulating stores of fertilizing substance.

The leaves which blanket the earth in autumn, are at once brought under the influence of her subtle chemistry, and thus prepared for contributing to other and more durable forms of vegetable growth. The frugal farmer will not forget the forest. He will bring it under stated contribution. If gathered in autumn, leaves form

excellent absorbents for the precious fluids so abundant in the stable and barn-yard, yet so often suffered to float off and evaporate. Or if left to decay where they fall, leaves make a valuable muck, especially when mixed with lime or ashes.

In Great Britain, where land commands a much higher price than with us, the principles of economy which I am aiming to recommend, have long since been faithfully tested, and are now generally observed in the management of soils. I have somewhere seen mention made of an English Cottage, whose garden was made to *manure itself*, and at the end of twenty years, without having made the acquaintance of a single forkful of barn-yard dung, the tilth was deeper, mellow, richer; the yield more abundant and of better quality than ever before. The manuring of the garden was managed somewhat after this fashion: All the refuse of the garden, such as leaves, vines, grass, haulm and weeds, was carefully saved and thrown into a pile. Every fragment of rubbish was gathered up and nothing wasted. To this were added scrapings from the road, drainings from the kitchen sink, and soot from the chimney. The liquid from the chambers was daily emptied upon this heap, and the whole was repeatedly turned over and intimately mixed, until the vegetable ingredients were decomposed. Once a year the garden received a good dressing of this manure, and with thorough cultivation the result was what I have indicated.

Before bringing these suggestions to a close, I must

be allowed again to refer to the contents of the privy. On account of the repugnance which they inspire, fecal substances are often wholly discarded as an auxiliary of production, or else are so improperly managed as to occasion great waste.

It has been settled by experiment, that the sulphate of iron or copperas, is both efficient and inexpensive as an agent for disinfecting fecal matters, by changing the ammonia into a fixed salt. A hundred pounds of copperas may be had at the shops for about eleven shillings, and if a solution of this be occasionally applied to the privy, it will cause the noisome effluvia to disappear.

A two-fold purpose will thus be accomplished. By fixing the volatile ammonia, in which resides a fertilizing energy, the value of excremental manures is greatly enhanced, while the imprisonment of all offensive odors, renders them capable of being transported, diluted and applied, without any inconvenience or disgust. It is a point worthy of investigation, whether the application of sulphate of iron in solution, would not be of good service in the barn-yard. If each new layer added to the manure heap were sprinkled with copperas water, much of that most important element, the ammonia, (which is otherwise lost by reason of its volatility,) would be changed into a fixed salt, and thus saved.

For the facts which I have here submitted in regard to the employment of copperas as a disinfecting agent, I am indebted to the Report of the Commissioner of Patents, for the year 1844.

### THE PROPER POINTS OF MILCH COWS.

I agree with the remark of "A Dairyman," in the August Cultivator, that we should not be satisfied with dairy qualities *only*, in milch cows. I am convinced, from several years' experience in keeping cows, that the best dairy qualities may be united with neat forms, good constitutions, good quality of flesh, and a tendency to thrive; and that cows combining these qualities are far more profitable than others.

This section has long been somewhat noted for good working oxen; the team work of our farms is performed by them, and they are always in demand, at from \$125 to \$175 per pair,—prices which render it an object to produce the best. Many of our farmers, therefore, do not only select or breeding their cows, but to those also which denote their capacity to produce valuable oxen. They obtain strong, well proportioned, clean-limbed, hardy cows; and it has been found that such frequently produce as much *butter*, though they may not give the greatest quantity of milk, as any cows we have. They are easily kept, are long-lived, and free from disease; and their progeny, where proper regard is paid to the character of the sire, are valuable either for cows or oxen.

Some valuable ideas, in regard to milch cows, are given in an able article on the Jersey or Alderney cow, by Le Couteur, published in the fifth volume of the Royal Agricultural Society's Transactions. The cows of this breed have for many years been held in high estimation for the dairy, or more especially for butter-making. Formerly, little or no attention was paid to the shape of the animal; the Jersey farmer sought only for such as were good for the production of rich milk; "he was content," says Le Couteur, "to possess an ugly, ill-formed cow with flat sides, wide between the ribs and hips, cat-hampered, narrow and high hips, with a hollow back."

"Of the ancient race, it was stated, perhaps with truth, that it had no tendency to fatten; indeed, some of the old breed were so ungainly high-boned, and ragged in form, Meg Merrilies of cows, that no attempt to fatten them might succeed."

But careful attention in breeding has, we are told, greatly remedied this defect. "By having studied the habits of a good cow with a little more tendency to fatten than others, and crossing her with a fleshy, well-conditioned bull of a stock that was also known to produce quality and quantity of butter, the next generation has resulted of a rounder form, with a tendency to make fat, without having lost the butyraceous nature."

The society above alluded to have a "scale of points" for bulls, and another for cows, which are as follows:—

	Scale of Points for Bulls.	P'ts.
Art. I.	Purity of breed on male and female sides, reputed for having produced rich and yellow butter, .....	4
II.	Head fine and tapering, cheek small, muzzle fine and encircled with white, nostrils high and open, horns polished, crumpled, not too thick at the base, and tapering, tipped with black; ears small, of an orange color within, eye full and lively, .....	8
III.	Neck fine and lightly placed on the shoulders; chest broad, barrel hooped and deep, well ribbed home to the hips, .....	3
IV.	Back straight from the withers to the setting of the tail, at right angles to the tail. Tail fine, hanging two inches below the hook, .....	3
V.	Hide thin and moveable, mellow, well covered with soft and fine hair, .....	3
VI.	Fore-arm large and powerful, legs short and straight, swelling and full above the knee,	



and fine below it, .....	2
VII. Hind quarters from the huckle to the point of the rump, long and well filled up; the legs not to cross behind in walking,.....	2
VIII. Growth, .....	1
IX. General appearance,.....	2
Perfection,.....	28
No prize shall be awarded to a bull having less than 20 points.	
<i>Scale of Points for Cows and Heifers. P'ts.</i>	
Art. I. Breed, on male and female sides, reputed for producing rich and yellow butter,....	4
II. Head small, fine and tapering; eye full and lively. Muzzle fine and encircled with white; horns polished and a little crumpled, tipped with black; ears small, of an orange color within, .....	8
III. Back straight from the withers to the setting of the tail; chest deep, and nearly of a line with the belly, .....	4
IV. Hide thin, movable, but not too loose, well covered with fine soft hair, .....	2
V. Barrel hooped and deep, well ribbed home, having but little space between the ribs and hips; tail fine, hanging two inches below the hock, .....	4
VI. Fore legs straight and fine, thighs full and long, close together when viewed from behind; hind legs short, and bones rather fine; hoof small; hind legs not to cross in walking, .....	2
VII. Udder full, well up behind; teats large and squarely placed, being wide apart; milk veins large and swelling, .....	4
VIII. Growth, .....	1
IX. General appearance, .....	2
Perfection for cows,.....	30
Two points shall be deducted from the number required for perfection on heifers, as their udder and milk veins cannot be fully developed. A heifer will therefore be considered perfect at 28 points.	

No prize shall be awarded to cows, or heifers having less than 21 points.

These rules, with but few exceptions, would be approved by our best dairymen and stock raisers. In one point, that of a "*thin hide*," a variation would be preferred for so severe a climate as ours. A hide of more *substance*, but still "*mellow*" and elastic, would better enable the animal to bear the inclemencies of the weather, and would not in the least detract from its thrift or other good qualities.

Le Couteur states that the course pursued by the society has produced a great improvement in the Jersey cows; for while they are brought so near the standard of perfection that some are awarded nearly every good point in the scale, they are fully equal on the average, as dairy cows, to the old stock,—some of the improved variety giving fourteen pounds of butter in a week, and ten pounds per week being common, through the spring and summer months; and they give milk till within six weeks of parturition.

On applying the scale of points to the "*Old Jersey Cow*," the following points, according to Le Couteur, would be *taken from her*, viz:—

"Cheek large, 1—ewe neck, 1—hollow back, 1—cat ham, 1—flat side, 1—not ribbed home, 1—hind legs crooked, 1—general appearance, 1. In all 8; these deducted from 26, the number less the pedigree, leaves 18, which was about the average number the best cows had at the formation of the society."

Mr. Colman, in his "*European Agriculture*," speaks of the successful efforts which have been made to improve the Jersey or Alderney cows; and, as a specimen of what has been accomplished, refers to a young cow of this breed, which he saw at one of the cattle-shows. He thinks she was the handsomest of the cow kind he ever saw, and "gave the best promise of what a cow should be. She was of moderate size, compact, and well shaped, of that yellowish-dun color which generally characterizes the breed, with a large and golden udder, ears of an orange color inside, a thin and clean neck, and the bright eye of a gazelle."

E. A. G.

Worcester co., Mass., Aug., 1848.

## HORTICULTURAL DEPARTMENT.

CONDUCTED BY J. J. THOMAS.

### Supports for Climbing Roses.

In ornamental gardening, it must always afford the mind relief to escape from the stiffness of artificial arrangement, to the freedom and grace of skilful combination of natural and beautiful forms and colors. It was with this feeling that we were particularly pleased with the late remarks of an English writer on the training of tall and climbing roses, on such trees as afford the best natural supports, instead of painted sticks or cast iron rods. Where, in all the cut and clipped pillars, is there anything equal to the wild Michigan rose of the west, ascending to the tops of forest trees, and covering them with its variegated bloom? An imitation, with improvements, of these natural beauties, cannot fail to be eminently pleasing.

The following extracts are worthy the attention of all gardeners of taste—but the practical fact must not however, be forgotten, that well prepared earth, and good cultivation, at least for a few years, will be essential to success:

"The mountain-ash, when growing as a tree, is admirably suited to prop a climbing rose. Its foliage is pinnate, and not to be easily distinguished from the foliage of the rose; the color of its trunk and that of the

stem of the rose, are the same ashy gray; in size it is decidedly a small growing tree; in habit it is stiff and formal, with spray full of antlers or little hooks, all tending upwards, just as if Dame Nature had made a tree of pegs to hang her rosy mantle on." "Now, lest any one should imagine that I think of filling up a flower-garden with mountain-ash trees, I must beg leave to state, that where there is room for the rose-trees that I propose, there will be no lack of space for the stakes or props, for they will be within the rose-trees. These rose-trees were never intended for small gardens, and scarcely for large ones; they are the gigantic materials for fields of flowers high and wide, of long and deep avenues, the foreground figures fair and fragrant in the glades and dells of park scenery, where rides and drives invite. The bramble is another brother of the rose family, and this, as well as the mountain ash, ramble at large by ravine and crag, growing freely in any reasonable situation, and in spots where neither grazing nor tillage can be carried on. Surely, then, we may reasonably hope to establish a climbing rose in a locality where two brothers of the same family already flourish.

"The dwarf or weeping elm, engrafted on the com-

mon elm, forms an elegant head of this form; and, as these artificial drooping-headed trees are monsters, and grow slowly, they may be kept in dressed ground in small compass for many years. The one which I have before me has been four years planted; and one or two others, about ten years planted, have yet but very small heads. I may here mention that the young shoots of the elm resemble an immense pinnate leaf, and thus the leaf of the rose harmonises better with the foliage of the elm than I was led to expect before I made the comparison with the rose and elm twigs united.

"The weeping ash makes an admirable trellis for a climbing, or rather a trailing rose, and having pinnate leaves, the harmony of the foliage with that of the rose is complete. Nothing but a figure drawn accurately to a scale can give an idea of the excellent habit of this tree, standing as it does on a clean single stem, and forming a globular head with a fine bold outline, which may be varied by pruning to form an umbrella or semi-globular head, or may be allowed to feather down to the ground, and form an egg-shaped tent.

"Every weeping tree gives an idea of being depressed, and its very name 'weeping' implies a lack of comfort; therefore it should not be alone, but have a partner, whose rosy face should look upward, and at the same time look light and cheerful. To intertwine a weeping ash with roses would seem to mingle joy with its weeping, and make a striking contrast, since it could not fail to excite surprise to see a tree that usually hangs its head, and never shows a flower, come forth at last arrayed in such a bloom.

"Various devices have been resorted to, to hide the unsightly shank or stem of the standard rose, with more or less effect. I have sowed sweet peas around some, and planted other climbing plants round others, and have succeeded very well sometimes with such twiners as the *ipomœas*, &c., forming a cone of elegant flowers, and making the rose-stake serviceable to support a succession of flowers after the roses had faded. Still these creatures of a day, the *ipomœas*, &c., deserted me in my utmost need, for the least foul weather made them useless; and if they grew freely, they would not stop at any reasonable length, and, being so delicate when young, the smallest accident was sufficient to make a blank. The want of evergreens in a flower-garden in winter has long been felt, and, in short, to obtain a succession of beautiful living objects is the aim of every gardener in planting a garden.

"Now in this garden there exists, whether by design or accident I know not, a thicket of tall yew trees, and in front of these some very tall rhododendrons, and drawn up between the yews and rhododendrons, there stands a fine rose-bush, and, after the rhododendrons have flowered and faded, the rose blooms in the face of this "dismal grove of sable yew." And it is to this contrast of bright rose-color against dark green that I would invite notice: it sets off the rose to the greatest advantage, and always attracts attention, it being altogether unlooked for from such a sombre subject as the yew to wear a blush or other rosy hue upon its sullen face. Now, although the common yew tree be well adapted to support a climbing or other rose, from its patiently enduring to be clipped or pruned into any reasonable or even unreasonable form, I would prefer the Irish yew, and make the head of the rose stand high enough to bloom above the yew. It is the ordinary system that nature follows to elevate the panicle or cluster of flowers of a plant above the foliage. By this combination we get rid of the unsightly rose-stake, by effectually hiding it in the thick foliage of the yew, and, instead of a leafless rose, with a long grey switch of a stem tied to round iron or square tree all the winter, we have an elegant evergreen tree, admirably suited to the stiff formal lines of geometrical flower-

gardens; and surely a crown of roses, if properly worn, would set off to advantage the staid and sober virtues of the upright yew; neither would it derogate from its dignity thus to become handmaid to the queen of flowers."

#### The Circle of Fruits.

Are our farmers,—or such of them as have abundant means for this purpose,—supplied with good fruit during the whole twelve months? Is there any one commodity, more calculated to increase the pleasures of the country, and to render home attractive to young people, than fine, ripe, fresh fruit, of one's own raising, during the entire season?

Many have adopted a very erroneous opinion, and suppose the "fruit season" to be a small portion of the year. A good selection would extend the period of actual bearing and ripening in the open air, to nearly six months; and such kinds as possess keeping properties, if in sufficient quantity, would supply the other six. The first fruits ripen, even so far north as Albany and Rochester, by the first day of summer, and two weeks earlier at Philadelphia and New-York. Three varieties of the cherry,—the Early May, May Bigarreau, and Early Purple Guigne,—mature simultaneously with the Duke of Kent and Large Early Scarlet Strawberries; a host of other fine varieties of both these kinds immediately succeed them. Currants and Raspberries soon join the list, the Primordian plum, the Amire Joannet and Madeleine pears, and several delicious Apricots are on hand by wheat harvest; after which the profusion of peaches, pears, apples, plums, grapes, &c., furnish the richest supplies through autumn. Grapes and pears may be kept till spring, and apples till the succeeding summer. But, let it be remembered, that if the *long-keepers* are not laid in in very liberal quantities, the stores will soon be exhausted. The loss by unavoidable decay, as well as by consumption, must be allowed for. An excellent mode of keeping winter and spring apples, in the absence of a better, was this: "Lock them up in a cool, dry cellar, and hide the key." The error was in the limited supply; its correction, is to supersede the necessity by an abundant store. Every cultivator, therefore, while he plants liberally of the earliest ripening varieties, must plant still more liberally of long keepers; for while the former are soon succeeded by others, the latter must extend their benefits through a long and otherwise dreary period.

#### The Tree Pœonia.

Among all the fine and newly introduced shrubs, whether tender or hardy, nothing, we believe, will compare with the old Banks' Tree Pœonia. It endures the severest winters of western New-York, without the slightest injury, and will flourish with the most common cultivation in any good soil. From its slow growth several years are required before its full beauty is developed. A plant in the writer's garden, about seven years old, presents in its mass of branches and foliage a hemispherical form, and is about three feet high and five feet in horizontal diameter; and during the flowering season the present year, bore seventy flowers, all in bloom together, densely double, and varying each from five to six inches in diameter.

**LARGE PEACHES.**—The Ohio Cultivator states that very large peaches were exhibited at the Fair of the Columbus Horticultural Society, one measuring a foot in circumference [about 4 inches through,] and weighing 14 ounces. We believe the largest peach on authentic record, is that stated on the authority of George Lindley, in his "Guide to the Orchard," which was 14 inches in circumference. It had received the highest culture on a wall.



**Fall Transplanting.**

Persons of limited experience differ in their opinions, as to the relative advantage of spring and fall for transplanting trees, while the most experienced fruit growers prefer the fall for all hardy kinds.

Some believe that the apple, pear, plum, &c., can be moved with the least injury in the fall; while the peach and apricot will succeed best in the spring. Mr. Downing says, in relation to the peach,—“North of New-York, it is better always to make plantations in the spring. South of that limit, it may usually be done with equal advantage in autumn.”

My experience has confirmed me in the opinion, that in our latitude fall planting for the peach is better than spring, if set on dry ground; and they should be placed on no other.

On the 5th, 6th, 8th, and 9th of November last, I set in the orchard one thousand five hundred, worked on budded peach trees; and now, on examining them, find that all are alive but ten; the trees are not only alive, but are making a good growth, so that the rows can be seen half a mile.

I have six hundred peach trees, which have been in the orchard from three to five years, the most of which were transplanted in the fall, with success equal to those set last autumn.

The manner of preparing the ground, and treatment of those set last fall, has been as follows: The field was sowed to buckwheat last season; after that was harvested, straight furrows were plowed one rod apart, then furrows were run the other way the same distance; where the furrows crossed each other was a mark for a tree, and the plowing assisted in digging the holes. The roots were set no deeper than the plow run; they were hilled up a little more than would be required for spring planting.

Early in the spring they were examined, to see whether all had kept their position, and if the frost had started any during the winter they were attended to. About the middle of June each row was plowed, the same as a row of corn, with a two horse team, having a short whiffletree for the off side horse; two men followed the plow and hoed each tree.

The ground has since been plowed clean and sowed to buckwheat, but none allowed to grow within two feet of the trees.

This field occupies a high and bleak position; front being a level eminence, the balance sloping north and west. E. C. FROST. *Seneca Lake, Highland Nursery, Catharine, Aug. 1st, 1848.*

**Raising Pear Trees From Seed.**

A series of questions in regard to raising pear stocks having appeared in the *Massachusetts Plowman*, they were answered in a very judicious and clear manner by JAMES W. RUSSELL, of Nelson, N. H. The questions and answers are as follows:

1st. What kind of soil suits the pear seedling the best?

*Ans.* A deep mellow loam from 18 in. to 2 ft. deep on clay or hard pan bottom.

2d. What kind of manure is best?

*Ans.* Compost manure that has been thoroughly worked, until it has in some measure the appearance of an ash heap.

3d. When is the best time for sowing the seed?

*Ans.* November, as late in the month as the ground can be worked.

4th. What kind of pears are best for seed?

*Ans.* The wild or Perry pear.

5th. How long time should they be allowed to grow in the seed-bed before they are transplanted?

*Ans.* Sixteen months from the time of sowing the

seed, or plant out into Nursery Rows as early in the spring as the ground can be worked.

6th. Is not the tap root essential to a vigorous growth of the young stock the first year?

*Ans.* Yes, it is.

7th. Should they be allowed to remain in the ground without being taken up the first year? If so, what is the best way to protect them from frost?

*Ans.* By mulching with horse manure 3 or 4 inches thick amongst the plants.

8th. Is there any remedy for the blasts which strikes the leaves during summer, thereby stopping the growth of the young tree at once?

*Ans.* Great depth of soil, and a slight mulching when the drouth commences.

9th. What is the best method of destroying the lice which feed upon the young stock, and check its growth while they remain, if not for the remaining part of the season?

*Ans.* A strong decoction of tobacco-water, with a small portion of urine from the cow mixed with it; the young stocks must be immersed in this fluid. It will be seen that a wide and shallow vessel will be needed for this purpose to hold the wash; from three to six of the young stocks may be immersed at once. It should be remembered that a cloudy day, or to commence three hours before sunset, should be the preferred time to perform this important business.

10th. Finally, how should the soil be best prepared for the growth of the young stock?

*Ans.* By trenching the ground two feet deep, and by digging in a bountiful dressing of the aforesaid compost manure, before the sowing of the seed and before transplanting the stocks into Nursery Rows.

Finally, by keeping the ground clear of weeds, and frequent hoeing through the season, the cultivator may have every reason to expect that his labors will be crowned with success.

**Tongue or Splice Grafting.**

EDITORS OF THE CULTIVATOR—I notice the mode of grafting small trees pointed out by E. M. HOYT, (pp. 214, 215.) in the July No. of your paper.

I would suggest as an improvement upon this mode, a plan which I have practiced with success, (and which I believe is common among nurserymen,) that of making a split in both stock and scion, and dovetailing, as it were, the two together, taking care always that there shall be a meeting of the inner bark of the stock and scion on one side at least; then wind round soft bass-wood matting, to keep the scion in place, and covering the parts with grafting wax or grafting clay, applied over the matting to exclude the air.

The superiority of this mode, commonly called tongue or splice grafting, consists in the support afforded by the tongue, (or the dovetailing of the parts,) to the scion; it is much less liable to get displaced, in applying the covering to protect the parts from the air, than the mode practiced by Mr. Hoyt. This mode of tongue-grafting, is performed by many upon small trees, without putting any bandage round the parts; but in this case, the stock is usually cut below the surface of the soil, the scion is then placed properly upon the stock, and the earth drawn up over the stock, leaving merely the tip of the scion exposed to the air. Nine in ten of the scions thus inserted are sure to live; indeed the work must be done in a very bungling manner, where stock and scion are both in good condition, if there is a failure.

Whip, tongue, or splice grafting, may be performed upon small stocks in the house, as well or better than any where else,—and earlier in the season than it would be comfortable to perform it in the open field.

Suppose for instance you have a hundred seedling pear or apple trees which you wish to work, of the 2d or third years' growth. The stocks will be from the size of a goose-quill up to about half an inch in diameter.

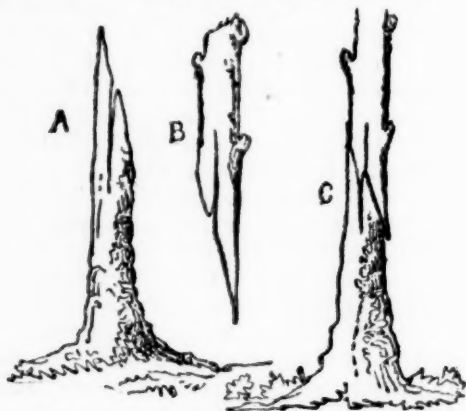
The stocks, if not already in the cellar, may be carefully raised from the ground and brought into the cellar, and the roots covered either with earth, sand, or moss, to keep them moist; a dozen or so of the stocks may be brought from the cellar to the operating room, which grafted, bandaged and wax or clay applied, and then returned to the cellar again, to be set out in the nursery or wherever else wanted at a convenient season, taking care that the roots do not become dry by a continued exposure to the air. Should the operator be short of stocks for his scions, he may work his grafts upon pieces of the roots of the same kind of trees as the scions; that is, apple scions upon apple roots, pear scions upon pear roots, and never fear for the result; the labor is little, the success almost certain; I have tried it and speak somewhat from experience. Again, suppose the operator to be where choice fruit is found in the autumn, he may cut scions then and preserve them through the winter in his cellar, by setting the ends in sand, and graft in the spring.

I, in one instance, cut scions in October some forty miles from home, carried them home in my valise, preserved them in sand through the winter, and set them the next spring; the scions are now growing and doing well.

Some are fastidious about the covering they place around the stock and scions in grafting. I have tried grafting wax and grafting clay, prepared in various ways, and have not been able to discover any essential difference in the growth of scions and health of the stock, whether wax or clay was the covering material; of the two, I prefer wax, as being neater and more convenient to use. Grafting in orchards is best performed by two hands at least; one prepares the limbs, smooths the ends after the cut of the saw, and applies the wax after the scions are set; the other prepares and sets the scions, and also aids in sawing off the limbs to be grafted on.

The cut accompanying the Hoyt mode of grafting represents a smooth slope of both stock and scion.

This, you will readily perceive is more likely to be displaced than the following or tongued mode.



A. Stock. B. Scion. C. The two united.

Let any one wishing to try this method, first take an apple tree shoot, without reference to having it live; cut it off in a sloping direction, make the splits in the severed parts, and unite them by inserting the tongue of one into the split in the other, two or three trials will give the learner the right idea; always remembering that the splits are to be made in such part as will allow the largest surface of the stock and scion coming in contact at the outer edge of one side, so that the bark and sap-wood of stock and scion may come in

contact on one side at least; I say one side, because the stock may be larger than the scion, and vice versa. W. N. GREEN. Worcester, Mass., July 10, 1848.

#### Profits of the Strawberry Culture.

Mr. D. D. T. MOORE, of Watervliet has about an acre of ground which has been planted to strawberries three years. He paid sixty dollars for the land, it being a part of a farm which he purchased at that price per acre. The strawberries have paid for the land, and leave a nett profit of nearly \$200. The past season, the strawberry ground has not been as productive as usual—it yielded 4,000 baskets, (three baskets to the quart,) and brought in the aggregate about \$150. Mr. M. thinks it would render the strawberry culture in this vicinity more profitable if more persons would engage in it. The reason he gives for this opinion is, that those who buy and sell strawberries in the Albany and Troy markets, now oblige the producers in this neighborhood to sell at their prices. They do this by sending their agents through the New-York markets, after the sales for the city are principally closed for the day, and buying up such as are left at low prices—then making the producers here submit to corresponding prices, they control the markets. Mr. M. states that from 100 to 150 dollars' worth per day are brought here from New-York during the strawberry season. There should be enough raised here to establish prices, independent of the dealers who only purchase to sell again.

#### Fumigating Plum Trees.

In the notice of a late horticultural meeting at Zanesville, Ohio, (reported in the *Gazette*,) it is stated that CALEB HALL presented fine specimens of plums, of which he has this year a good crop. He was formerly much annoyed by the curculio, but "in 1845 he fumigated his trees with brimstone, and repeated the operation in 1846, and both those years had good crops; for besides what his family used, he sold in market about \$20 worth per annum. In 1847 he did not use the brimstone, and did not, to use his own words 'get enough to make a pie.' In 1848, he again used the brimstone and has a fine crop. He says he gives the naked fact, without saying how far it may be made a perfect remedy for the evil." We know friend HALL to be a careful and intelligent cultivator. Will he be so good as to furnish us with the particulars in regard to this matter? stating how often the trees were smoked, &c.

**EXPELLING THE CURCULIO.**—The Cultivator contains directions to destroy or repel the Curculio, that pest to choice fruit. The method I pursue to destroy them, is effectual and simple. At the time the fruit is liable to injury from attacks of the curculio, I shake the trees violently during heavy showers, and catch them in my umbrella, or they are beaten to the ground to be drowned or picked up by the poultry. When timely showers do not occur, I make a blaze of straw or shavings in a kettle, after dark, then shake the trees and disturb or destroy them in that way. A. B.

Rightstown, Pa., June, 1848.

**INFLUENCE OF THE GRAFT.**—Dr. KIRTLAND says, "a graft of the Green Newtown Pippin will invariably render the bark rough and black, (the habit of the variety,) within three years after its insertion.

**Changing the bearing year of an Apple tree.** R. Manning of Salem, with several hours' labor, cut off all the blossoms from a Baldwin apple tree, in the spring of its bearing year. The consequence was, the bearing year was completely changed, the bearing years have become fruitful, and vice versa.



### The Nursery Business.

The great increase in the number of nurseries for the raising of fruit trees, within the past few years, shows the attention which the business has drawn to it, as well as the interest in the public generally to procure fruit. Very vague and indefinite are the notions of many respecting it; large numbers engage in it with the belief that it is the sure road to fortune; and others suppose that the prices paid for fruit trees are too high, and that half their money thus expended goes to make the nurseryman rich, and hence this money is grudgingly bestowed, and trees more sparingly planted.

We believe a more general knowledge of the real nature of this business, would be useful in many ways, and prevent disappointment to beginners, and consequently tend to success in cases which are now accompanied with failure. Many have noticed the great benefit which has been derived in those parts of the country where nurseries were early established, in the number and quantity of fine fruits which now exist. The successful establishment of nurseries, becomes therefore, a public benefit; and it can hardly fail to be useful to point out to those engaging in the business, the costs as well as the profits which are to be expected.

A brief estimate of the cost of raising a nursery of ten acres, may assist in placing the business in its true light. Nearly all nurseries of much size or character in this State are near cities,—because they are found most profitable in such localities,—where land costs from \$300 to 500 per acre, the yearly interest on which would be \$21 to \$35 per acre, and the rent not less. Taking \$28 as the average, the rent of ten acres would be \$280 per annum. To keep a nursery of this size in proper order, at least four hands on an average, and one horse would be required; with board and feed, the right sort could not be had for less than \$750. The materials to stock such a nursery would vary greatly with its character and with circumstances; but we will call it \$500.\* To manure and drain the land properly, and bring it to a suitable condition, could not be less than \$50 per acre. Advertising, printing catalogues, procuring tools, materials for packing trees, &c., would be \$100 per year. The yearly cost of seeds and collecting stocks, &c., might vary from \$50 to \$1,000, according to circumstances, or the enterprize of the nurseryman, but we will call it \$200. There are many other items of a smaller nature which we do not take into account. The whole cost, therefore, of a ten acre nursery for five years, the average growth of saleable trees, would be as follows:—

Rent \$280×5 years with interest,.....	\$1611
Labor, 750×5 years,.....	3750
Interest,.....	565
	4310
Stock, \$500, with interest,.....	701
Manure, &c., 500 with interest,.....	701
Printing, tools, &c.,.....	500
Interest,.....	77
	577
Seeds, stocks, &c.,.....	1000
Interest,.....	322
	1322

Total cost in 5 years, ..... \$9222

Or \$1844 per year.

In computing, compound interest is reckoned, and when the entire outlay was at the beginning, the interest on the whole is taken: where yearly expenses are estimated, interest on the successively accumulating sum only, is allowed. The aggregate cost would be

\* The constant renewals, and procuring new varieties, &c., would about renew this amount by the end of the first five or six years, when the first stock of trees will be sold out.

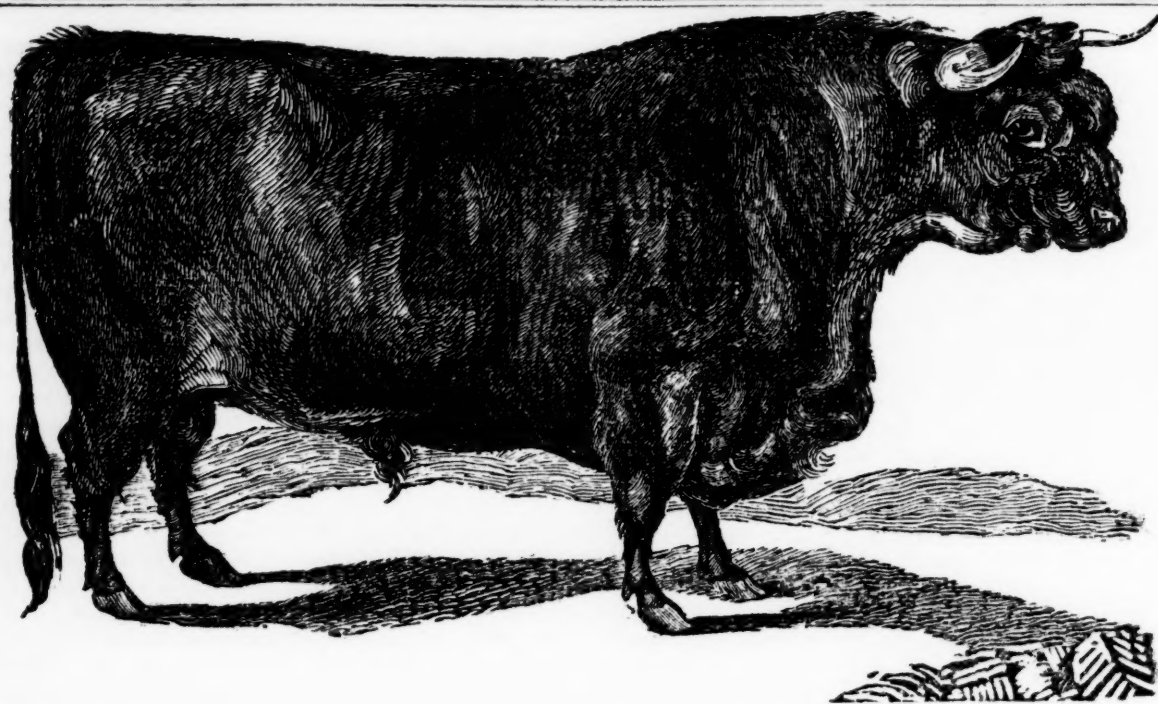
less where land is cheaper, but the profits in such cases, from a want of facilities, would be reduced still lower.

To estimate the actual value of such a nursery would be nearly impossible. The accidents which befall young trees are so numerous, that to say how many may become actually fine saleable trees, would be entirely conjectural. Many failures occur,—sometimes thousands are killed in a single winter by the heaving of the soil—or by severe or unusual winters—or by freezing of the inserted bud—or by breaking down under deep snow—or by drying of the grafts—by severe drouth—by ungenial soil—or by all these causes more or less combined. We have known different nurserymen expend hundreds, and in some cases thousands of dollars in attempting to raise certain kinds of trees, on land naturally unsuited to them, though highly manured, without receiving ten per cent on the outlay; we have known the value of thousands of dollars destroyed in one winter by frost in a single nursery; we have seen young and tender trees perish by tens of thousands in the excessive drouth of a summer. The facilities for disposing of trees, also, are greatly influenced by circumstances. Sometimes the demand for a particular variety may be great; in a few years it may become unsaleable, or be eclipsed by others not always better, and large sacrifices result from such overstocked market. Large deductions must often be made to agents, for it rarely happens that a nurseryman is able to dispose of his entire stock at full retail prices.

We have already shown that a ten-acre nursery, if properly conducted, costs nearly \$1,000 a year—taking every thing into account, it would probably exceed this sum. The profits must come from one-fifth, or two and a-half acres yearly average. The superintendent or proprietor of such a nursery, who is his own salesman, bookkeeper, clerk, traveller, and general manager, would hardly expect less than five hundred dollars per year for his services; especially if from this amount he had to pay house rent, and furnish his family (if he has one) with food, clothing and fuel, to say nothing of paying doctors' bills. Twenty-five hundred dollars must come yearly from two and a-half acres; and when it is remembered that, in usual practice, not half the trees planted ever attain a marketable appearance, and that there are in fact often not more than one thousand good trees on two and a-half acres, which at this rate would have to be sold at twenty-five cents each, as an average,—it will be perceived that the present prices of trees cannot be much reduced except at a loss. Extreme cases occasionally occur of a much greater amount of good trees per acre; but formidable losses also occur, greatly reducing the average. In conclusion, it may be therefore remarked, that this, like all other kinds of business, requiring judgment, activity, vigilance and intelligence, may if industriously pursued, afford a return for the labor bestowed. We have known a few men who have thus accumulated comfortable estates—we have known a larger number who have either lost or become insolvent—and a still larger number who have just succeeded in making a living.

The question often arises, whether the farmer can most cheaply raise his own trees or purchase them. If he has some knowledge of the business, trees of good varieties to propagate, and considerable leisure, he may easily raise them, otherwise not. Whatever is done by wholesale, is usually most cheaply done; and this is especially the case where new varieties are to be introduced. The nurseryman may procure such, and furnish a hundred or a thousand, at a lower rate than an amateur could procure it from the same source, and raise but a single tree.

ERRATUM.—p. 217, line 3d from bottom of 2d column, for "Eastern pippin," read *Easter Pippin*.



WEST HIGHLAND CATTLE.

It is by no means uncommon to hear some of our domestic animals spoken of as belonging to "*native breeds*;" and from the little consideration which is usually given to the subject, it is not improbable that some people have lost sight of the fact that all these animals, (including poultry, with the exception of turkeys,) were introduced into America from the Old World.

True, we have two indigenous species of the ox, the Buffalo or Bison, and the Musk Ox; and also a wild species of sheep, (the American argali, or Rocky Mountain Sheep,) but all these are specifically different from our domestic races.

Only about three centuries and a-half have elapsed since the first permanent settlement of this country was established by Europeans, and it is but little more than two centuries since our forefathers planted themselves on the territory which we occupy. It is obvious, therefore, that our horses, cattle, sheep, swine, &c., have been disseminated here within the period alluded to—the parent animals having been introduced at various times.

The numerous herds of cattle and horses which roam over the vast plains of South America, were derived from domestic stocks brought by the Spaniards from their native country, and turned loose to subsist and propagate their species, in a great degree uncontrolled by man. The small, half-wild ponies occasionally seen on our western prairies, and the ponies in the possession of our Indian tribes, are the descendants of animals derived from the French colonists in Canada, or from the Spanish settlements at the South.

In the English settlements, the cattle, as well as most of the other domestic animals, were brought chiefly from the British Islands. The inquiry has often been made—to what variety the common cattle of our country originally belonged? It is not easy to answer the question. There were probably importations of various stocks, though we have no authentic account or description of them. The heterogeneous character of our common cattle has led to the idea that the progenitors were not selected with much regard to purity of blood or similarity of points; but it must be admitted that they have generally been bred in so careless and indiscriminate a manner, that they would not be likely to

make any approach towards a standard of uniformity. An exception should, perhaps, be made in reference to some parts of New England, where the original stock is believed to have been obtained chiefly from Devonshire and Sussex, and has assumed more nearly the appearance of a distinct breed than the general stock of the country.

It was not, however, till the middle of the last century that any systematic attempts were made to improve the breeds of British cattle; and as the importations of stock to this country for the purpose of effecting improvement, have been made since that period, it is comparatively easy to ascertain the varieties from which they were taken.

It may be proper to observe that the present breeds of British cattle are arranged in four general divisions: viz., Long-Horns, Middle-Horns, Polled Cattle and Short-Horns, exclusive of the Alderneys. These are subdivided into many varieties, each having its distinctive name. Thus, among the Middle-Horns we have the Devon, Hereford, Sussex, and several Scotch and Welsh breeds; among the Long-Horns we have the Bakewell, Lancashire and Irish; and among the Short-Horns, the Yorkshire, Durham, &c.

Within the last sixty years, we have had importations of several families of Short-Horns, and Long-Horns, together with Herefords, Devons, Ayrshires and Alderneys. These breeds, for the particular purposes and localities for which each is adapted, have succeeded well, and have been of great advantage. But considering the great extent of our country, and the great variety of climate and surface which it embraces, the inquiry is presented, whether there are not breeds which have never been introduced here, that would be better suited to some sections than any we have yet obtained? We allude particularly to those parts of the country in which animals are required to endure considerable exposure, and to obtain their subsistence from rough or sterile grounds. Our northern districts, including a large portion of New-England, New-York, and the Canadas, and all the mountain ranges from thence to Georgia, are of this character.

In reference to the question—what would be the best and most profitable cattle for these sections, we beg



leave to call attention to the characteristics of the West Highland breed of Scotland, as described by various authors. It may be observed in the outset, that they belong to the primary division of Middle-Horns.

MARTIN, in his late work on the Ox, says:—"Turning to Scotland, it may be observed that from the remotest times, this land of heath and mountain has been the nursery of an original breed or race of black cattle, of wild aspect, of beautiful symmetry, and though small, yet vigorous and hardy; patient of hunger and cold, and rapidly fattening on tolerable land."

There are several varieties of cattle in Scotland, but those of the Hebrides or Western Islands, commonly called *Kyloes* or West Highlanders, are considered most pure. Mr. MARTIN speaks of this breed as follows:

"Change the color from black to white, and there is little difference between a beautiful Kyloe from Arran, Islay, or the Isle of Skye, and one of the wild cattle of Chillingham; if we may venture an opinion, they display more nearly than any other breed, the characters of the mountain cattle of our island when invaded by Cæsar. We say the mountain cattle, because we suspect that a larger and heavier race [the Long-Horns] even then tenanted the swampy plains and low grounds of many portions of the country."

He thus gives the points of these cattle:—"In a well bred Kyloe, the following characters are conspicuous: The head is small and short, with a fine and somewhat upturned muzzle; the forehead is broad; the horns wide apart at their base, tapering, and of a waxen yellow; the neck is fine at its junction with the head, arched above, and abruptly descending to the breast, which is broad, full and very prominent; the shoulders are deep and broad, and the chine is well filled, so as to leave no depression behind them; the limbs are short and muscular, with moderate bone; the back is straight and broad; the ribs boldly arched and brought well up to the hips; the chest deep and voluminous; the tail high set, and largely tufted at the tip; the coat of hair thick and black: such is the bull. The ox differs in proportion. The cow is far more slightly built, and her general contour is more elongated. Although, as we have said, black is the ordinary or standard color of the kyloe, many are of a reddish brown and some are of a pale or whitish dun."

The descriptions of this stock by LOW, YOUTT, and others, are of a similar character, with the addition that their beef is stated to be of the finest quality, commanding the highest price in every market where it is known. Their milk, though not afforded in great abundance, is of extraordinary richness, and the butter and cheese from it is highly esteemed for its superior flavor. —PITT, in his "Survey of Leicestershire," states that the late Mr. BAKEWELL made a trial with three cows; a Yorkshire Short-horn, a Scot, and one of his own improved Long-horn, or Dishly breed. The result was that the Short-horn ate much the most food and gave the largest quantity of milk; the Scot made *most butter*; and the Dishly gave least milk, but increased most in weight.

The late JOHN PRICE, Esq. of Poole House, Worcestershire, England, a distinguished breeder of Hereford cattle, stated in a communication to the *Farmer's Magazine*, (vol. iii, new series, pp. 49, 50.) that he deemed the West Highland Scots to approach more nearly than any other breed, the standard of form which he considered the true one, and he therefore decided in the outset on adopting them as his "model." He was still more induced to this course from a conviction that they "had remained longer than any other breed in the place where they were first located, and were more free from intermixture with others." For his soil, he wished an animal somewhat larger than the

West Highlanders, and he chose the Herefords as coming nearest his model of any having the requisite size.

C. HILLIARD, in his "*Practical Farming and Grazing*," says—"The West Highlanders are as perfect in their form as any cattle upon the face of the earth."

The size of the Kyloes or West Highlanders varies somewhat, according to the locality. The nett weight of those from the Isle of Skye and Islay, is said to be from 500 to 800 pounds, the four quarters, at four to five years old. The Argyle variety is considerably heavier. Mr. MARTIN says—"In Argyshire they are larger than in the Hebrides, and many of them are models of beauty—pictures of a noble, semi-wild race; descendants of the old mountain breed, which once roamed in the wilds of Caledonia, and came crushing the forests to meet the fierce hunter."

Now are not the qualities possessed by these Highland cattle, precisely such as would adapt them to those parts of our country of which we have spoken? We think so, and are confident in the opinion that the introduction of this breed, and their relatives, the Galloways, would be a decided acquisition. We would, therefore, recommend the subject to the attention of our able agricultural societies, wealthy land-holders and other enterprising and public-spirited individuals, through whose influence and exertions we hope to see the stock introduced and submitted to a fair trial.

The figure at the head of this article is that of a West Highland bull, bred by Mr. GRANT, of Banffshire, Scotland, which received the highest prize in his class, at the show of the Highland Agricultural Society, in 1840.



**Rustic Hencoop.**

The above is a sketch of a rustic hencoop and trellis, taken from one in Mr. Arden's garden in Putnam county. It is very simple and easily constructed. The Hen coop is a log cabin on a small scale, with the eaves of the roof projecting, and the door immediately under the eaves. The trellace is to be made of cedar poles with the bark left on and crossed as in the drawing. Plant a vine to partially cover it, and it will be found very ornamental. Trellis 10 feet high. A SUBSCRIBER.

## THE FARMER'S NOTE BOOK.

## Scotch and American Plows.

In the *Cultivator* for April, page 108, your correspondent, W. of Lenox, Mass., delineated both the Scotch and American plows, and attempted to show the superiority of the former over the best specimens of the latter, and he arrives at the conclusion, that wherever first rate plowing or thorough tillage is required, "the Scottish plow or some analogous instrument must be used." But I am not quite prepared to see so much skill and labor as has been expended on the American plow, consigned so suddenly to oblivion, believing as I do that our best plows are not excelled by any other whatever. Before we can determine what constitutes a good plow, we must know what work the plow is to perform—the dimensions the furrow-slice should possess. And here it may be well to remark, that the same plow may be so adjusted, as to plow deep or shallow and make work equally good, but cannot be made to turn furrows of widths materially different and do each in the same perfection. And when we see contrivances for turning the plow to the right or left, it reminds one of an almanac published not long since, and calculated for a certain meridian, but would "answer for all places adjoining."

Every plowman knows, that a plow will do the best work in turning a furrow about as wide as the extremity of the wing of the share. The question now arises, what width of furrow is it most profitable to plow at present in this country?\*

We are in the habit of frequently referring to the European modes of farming, and some are ready to adopt many of the practices of that country, without considering whether they are adapted to our circumstances. Owing to the difference in the prices of land and labor, a system of farming that is profitable in one country would be ruinous in the other. Thus spade husbandry in some parts of Europe is extensively practiced, but for reasons already stated, would not answer here. On the same principle, the furrow slice may be so narrow that the extra product, if any, would not pay for the extra amount of labor expended. Some writers in this country have recommended that the furrow-slice be not more than six inches wide, but in practice it is believed that not one farmer in a hundred plows less than 9 or 10 inches wide, and in light soils, some still wider. And it is inferred that ten inches is the width that "W." plows, for he says, speaking of his Scotch plow with a wing six inches wide, that it does not cut the furrow much more than half off on the under side." This being the case, it is no wonder that his "plowman received no premium," for however fair the work might appear on the surface, it is probable the committee examined the under side of the furrow as well as the upper, and could not conscientiously award a premium where so much imperfection was found. But let us for a moment examine the merits of the Scotch Plow, when moving in its appropriate sphere, that is, when turning a furrow only six or seven inches wide. W. says, "its long and twisted mould board raises the slice, pulverises it completely, and leaves it in its place with absolute regularity;" and quoting

Colman he says, the "work when done resembles a ruffle just come from a crimping iron." That the work of the Scotch plow when guided by an experienced plowman, appears quite uniform, is not denied. But because a furrow resembles a ruffle just come from a crimping iron, or a brick just come from the mould, does that prove that it is finely pulverized? Certainly not; on the contrary such appearance would indicate that it had not been broken at all.

Let it not be said that I would advocate a retrograde movement, that I would have a furrow less perfect, but the perfection to be preferred is not the perfection of appearance merely, but that of utility. The furrow should be drawn in a straight line, should be of uniform width and thickness, but when inverted, the surface should be somewhat convex, and be full of crevices, some of them perhaps, half an inch in width; this would indicate that it had been finely pulverised. And this is precisely the situation in which some of our best American plows leave it, and when left in this way, the land remains light and lively a much longer time than it otherwise would.

It is admitted that in very strong ground, the Scotch plow, on account of its great weight, is less liable to be thrown out than the American, but there are comparatively but few sections of country where it will be necessary to use them on that account. Do not those figures on the page referred to, need to be explained? They were made it is said, "in order to give at a glance, the comparative proportions and size of each kind of plow."

It will be seen that the distance, as there represented, from the point of the share up to the under side of the beam, in the Scotch plow, is about double to that of the American. By measurement, I find the distance in the American plow that I use, to be fifteen inches, and I have never seen a Scotch plow, (and I have seen several,) in which the distance was 30 inches. Besides, there is usually in the Scotch plow, a draught-rod\* some 3 or 4 inches below the beam, which has the same tendency to cause the plow to clog, as if the beam itself were in that place. W. says, truly, that the wing of the share is usually 10 inches wide in the American plow, and not over 6 inches in the iron one. But in the figures there given of the underside of each, the wing of the Scotch plow is  $\frac{1}{4}$  of an inch in width, and of the American  $\frac{3}{8}$ . By what rule in arithmetic he can make this the same proportion as six to ten, I confess I am not able to discover.† Your correspondent thinks, that in order to move the Scotch plow, our farmers must procure much more powerful animals than they at present employ. It is quite probable that some who use the American plow, have as good teams as those who use the other kind,—but they may not care to tax them to the full extent of their ability in the daily operations of the farm, and this, where considerable plowing is to be done, is an important consideration.

It is not surprising that among the almost endless variety of American plows, there should be some comparatively worthless; but there exists no necessity for so many kinds, for a plow that will turn a furrow of given dimensions with the greatest ease to the team

\* This question seems to imply that some special width of furrow would be proper for "this country." We do not think the case admits of any specific rule. The width of furrow should be varied with the nature of the soil and the purpose to be accomplished. On some soils, already too light, it might be expedient to make furrows twelve to fourteen inches wide; while to render others of a compact nature, sufficiently open and pliable, it would be best to plow not more than half that width.—Eds.

\* Scotch plows are sometimes used with draft-rods, but in those we have seen, the rod is by no means "usual."—Eds.

† The figures given by our correspondent W., we do not understand to have been drawn with mathematical accuracy, or to correspond precisely to the relative proportions of the plows represented; but were designed to give a general idea of their form.—Eds.



in one kind of soil, is usually best to turn a furrow of the same dimensions in other kinds. H. C. B. *New-Lisbon, N. Y., 1848.*

#### Good Butter.

The articles recently published in the *Cultivator*, on the subject of butter for the United States navy, are attracting the attention they deserve, and leading to inquiries and investigations which will result in eliciting truth and correcting erroneous opinions. The Secretary of the New-York State Agricultural Society is entitled to high commendation for the interest he has manifested in acquiring important information, and publishing it for the benefit of community.

The prejudice against butter, which is not marked "Goshen" or "Orange County," is passing away, and the dairymen of Chenango, Delaware and other counties have obtained a high reputation for the quality of their butter.

A Chenango farmer is now a contractor with the government for the delivery of ten thousand pounds of butter annually for the use of the navy. Last October he delivered the whole quantity—the produce of his own farm—at the navy yard in Brooklyn, in firkins of eighty pounds each. It passed the usual *rigid inspection*, and not one firkin was condemned. This instance is mentioned in confirmation of your remark, in the July number of the *Cultivator*, that other counties besides Orange produce excellent butter. I have another object in mentioning it, which is to stimulate our farmers by this example to exertion, and to the application of the requisite skill and attention to the manufacture of butter. The hills of Chenango afford the finest pasturage, and the purest spring water in abundance. Without these, good butter cannot be made. With them, no poor butter should be made. The rules to be observed in the manufacture are few and easily understood. The necessity—the absolute necessity of adhering to them, cannot be too strongly enforced.

*Oxford, N. Y., July, 1848.*

A. B.

#### Crops in Illinois and Wisconsin.

A correspondent who signs "A. E.," and dates at Cicero, N. Y., gives us a sketch of some of his observations during a trip through a portion of Illinois, Wisconsin and Michigan. He says:—"From Chicago I went a few hundred miles through the States of Illinois and Wisconsin, mostly by private conveyance, which gave me a fair opportunity of viewing the country; the grain crops here, as in Michigan, were very heavy on the ground, and bid fair to yield an abundant harvest. There is more spring wheat on the ground in Northern Illinois than there is winter wheat; it is considered a much surer crop, and nearly equal in quality. They have recently obtained a new kind of spring wheat called the Hedge-row, which so far answers an excellent purpose. It has a very short head, is hardy and free from all kinds of insects; it gives a good yield and sells for five or six cents only, less on a bushel than winter wheat. The potatoes in Illinois have been injured to some extent by the disease so prevalent in this section, but in north Wisconsin they have as fine potatoes as ever grew. They supply Buffalo and Rochester to a great extent.

The soil of the great prairies in Illinois, is a deep black muck, easy to work and very productive. I saw here in one or two young orchards the locust borer working in the apple-trees—in appearance, the same kind precisely that has destroyed so many locust trees in this section. The people much fear that their young orchards will be ruined. Do you know of any preventive?

GRAVEL BUILDINGS.—I saw in Wisconsin, some (to

me) new constructed buildings, called *Gravel houses*. They take coarse gravel and coarse sand; and they put one bushel of their common lime to 8 or 10 bushels of sand; they take boards about a foot wide, set them on the edge, 10 or 12 inches apart, and fill them up with the gravel and mortar about a foot; then let it dry a day, and so keep on till they get to the height they wish. It makes a good substantial building. At Beloit they have many buildings of this kind, and at Southport they have a large church built in this manner. It is as cheap as any other good mode of building."

#### Advantages of Forests.

The Hon. GEO. P. MARSH, in his address before the Rutland County Agricultural Society, makes the following excellent observations in regard to the advantages of forests:—

"The functions of the forest, besides supplying timber and fuel, are very various. The conducting powers of trees render them highly useful in restoring the disturbed equilibrium of the electric fluid; they are of great value in sheltering and protecting more tender vegetables against the destructive effects of bleak and parching winds, and the annual deposit of the foliage of deciduous trees, and the decomposition of their decaying trunks, form an accumulation of vegetable mould, which gives the greatest fertility to the often originally barren soils on which they grow, and enriches lower grounds by the wash from rains and the melting snows.

"The inconveniences resulting from a want of foresight in the economy of the forest, are already severely felt in many parts of New-England, and even in some of the older towns in Vermont. Steep side hills and rocky ledges are well suited to the permanent growth of wood, but when in the rage for improvement they are improvidently stripped of this protection, the action of sun and wind and rain soon deprives them of their thin coating of vegetable mould, and this, when exhausted, cannot be restored by ordinary husbandry. They remain, therefore, barren and unsightly blots, producing neither grain nor grass, and yielding no crop but a harvest of noxious weeds, to infest with their scattered seeds the richer arable grounds below. But this is by no means the only evil resulting from the injudicious destruction of the woods. Forests serve as reservoirs and equalizers of humidity. In wet seasons, the decayed leaves and spongy soil of wood lands retain a large proportion of the falling rains, and give back the moisture in time of drouth, by evaporation or through the medium of springs. They thus both check the sudden flow of water from the surface into the streams and low grounds, and prevent the drouths of summer from parching our pastures and drying up the rivulets which water them. On the other hand, where too large a proportion of the surface is bared of wood, the action of the summer sun and wind scorches the hills which are no longer shaded or sheltered by trees, the springs and rivulets that found their supply in the bibulous soil of the forest disappear, and the farmer is obliged to surrender his meadows to his cattle, which can no longer find food in his pastures, and sometimes even to drive them miles for water. Again, the vernal and autumnal rains, and the melting snows of winter, no longer intercepted and absorbed by the leaves or the open soil of the woods, but falling everywhere upon a comparatively hard and even surface, flow swiftly over the smooth ground, washing away the vegetable mould as they seek their natural outlets, fill every ravine with a torrent, and convert every river into an ocean. The suddenness and violence of our freshets increases in proportion as the soil is cleared; bridges are washed away, meadows swept of their crops and fences, and covered with barren sand, or themselves

abraded by the fury of the current, and there is reason to fear that the valleys of many of our streams will soon be converted from smiling meadows into broad wastes of shingle and gravel and pebbles, deserts in summer, and seas in autumn and spring."

#### The Law of Manures.

We notice that the question—"Do Manures Ascend or Descend?" has lately been considerably discussed. For our own part, we should no more think of asking or discussing such a question, than we should whether moisture ascends or descends? It obviously does both; and so it is with manures, unless the term manures is to be restricted to mineral substances only.

But though we believe that the valuable parts of manures may be both carried into the air and washed into the earth, we do not admit the propriety of some positions, by which the fact is attempted to be illustrated. For instance, it is said—"the gases of manure ascend, but the salts descend." The fact is here lost sight of, that the same substances are capable, under different circumstances, of assuming both a gaseous and solid form. Such is the case with carbon,—which constitutes the greatest part of ordinary manures, as well as vegetable substances; and also with nitrogen,—which has formerly been held by chemists, (and is, indeed, still held by many chemists,) as the most valuable and important element in manures.

If a heap of manure is left to ferment on the surface of the earth, or without being covered by some absorbing substance, its bulk and weight are greatly reduced. What has become of the lost portion? It has, of course, gone into the air, as it would have done if the manure had been acted on by fire. The manure, or a certain portion of it, has been resolved into its original elements, and the carbon and nitrogen it contained have again become parts of the atmosphere.

The nitrogen in manure is in the form of ammonia, and that it escapes during fermentation, has been proved; it is perceptible by the smell, and has, also, by means of acids, been detected in its ascent. Most people are familiar with ammonia in the form of a salt, and know that in this form it is extremely volatile, and readily passes into an aeriform state. It is also easily soluble in water; and is, therefore, readily washed into the earth by rains. Thus the very substance which forms a salt, may become a gas and ascend into the air; or it may become a liquid and descend into the earth.

Manures may be combined with substances which will prevent the escape of ammonia; such as charcoal, or charcoal-dust from coal-pits, peat, muck, soil, and vegetable or carbonaceous substances generally. If the process of fermentation is properly regulated, and the manure is combined with articles which will absorb the gases as they are disengaged, there will be no waste. It may be considered a rule, that whenever smell is emitted by manures, some of their valuable properties are being dissipated; hence their odors should not be wasted "on the desert air;" they should be saved and converted into vegetable substances, in which condition they are not only more agreeable to the olfactories, but become substantial elements of animal nutrition.

As to the sinking of manures, there is positive evidence of the fact. We have in many instances seen its effects to the depth of several feet. On the farm of Mr. PRENTICE, near this city, it was lately noticed, in digging a cellar near where a compost heap had laid, that the earth, to the depth of three feet from the surface, though it was of quite a compact and clayey nature, was so impregnated with the qualities of the manure that they were plainly perceptible. And the effects of manure are always traceable to a greater or

less depth, in proportion to the porousness of the soil and the quantity of manure applied. It is LIEBIG'S opinion that the soluble parts of manures, "phosphates, and other salts with alkaline bases," are drawn off, and wasted to a great extent by percolation.\*

The depth to which manures should be buried is another subject, which, in connexion with the question, whether they rise or fall, has been much discussed; and some, who believe that manures always ascend, have arrived at the conclusion that they should be placed from "a foot to eighteen inches" under ground.

We do not suppose it is practicable to lay down any fixed rule in regard to the covering of manures. Some general principles, however, may form a guide. It is evident that manures can only afford nutriment to plants when they are in a soluble condition. In their application, therefore, the causes which produce solution and decomposition should be regarded. These causes are, principally, heat, air and moisture; though in the elimination and assimilation of food by plants, light and electricity are evidently powerful agents. Most of these principles act with the greatest force near the surface.

In some cases, as in dressing grass-lands, we would spread manures on the top of the ground. But in such cases, we would use a well-rotted compost, in which the animal manures had been combined with such substances as would absorb the matters that during fermentation might pass off. The reason why we would prefer, for such a purpose, manure that had passed through the first stages of decomposition in the manner mentioned, is, that it would be more readily soluble, than in a fresher state, and would be immediately available to the crop; while at the same time its fertilizing principles would be so far combined and fixed, as not to be liable to waste.

But the practice of leaving manures entirely on the surface, is not, in many cases, the most judicious, for the following reasons: 1. If it is applied in an unfermented state, uncombined with absorbent substances, some of its valuable properties might be lost during decomposition. 2. With hoed crops, fresh or fibrous manures, on the surface of the ground, would be an obstacle, (more or less according to the quantity,) to cultivation. 3. Manures of any kind, or in any state, when left on the surface, might, from being kept too dry, fail to benefit the crop for which they were intended. Let it be recollected that they are only available to plants when in a soluble state; and to be made soluble, they must be kept moist. We would therefore cover manures to such a degree as would secure the advantages and avoid the objections here indicated, and no more.

On tenacious soils, a mechanical effect is sought to be produced by manures; that is, a greater friability of the soil. This purpose is best accomplished by plowing in strawy or fibrous manures in a fresh or unfermented state. This is obviously, however, quite a different thing from the application of manures to feed a crop.

#### Exhibition of the Royal Agricultural Society.

The exhibition of this society, for the present year, was held at York. It commenced on the 11th and closed on the 14th of July. The English papers speak of it as being "the greatest of the ten meetings" which the Society has held. The number of entries for animals was 725, and for implements 1508. The total amount bestowed in prizes was £2,295—(\$11,475,) of which £245—(\$1,225) was for implements. The number of animals and implements exhibited was much

\* See Liebig's essay on "Artificial Manures." Cultivator for 1845, page 364.



larger than on any former occasion. On account of the reputation of the district for horses, and for short-horned cattle, it was expected that these would be not only numerous, but of better quality than usual. The *Mark Lane Express* says, however, "in respect to the short-horns, we think we speak the general opinion when we say, they did not come up to the expectations which had been generally formed." The successful competitors for short-horns were, Mr. KEEVILL of Wiltshire, first, and Mr. BANNEMAN of Lancashire, second premium for bulls, in class I; Mr. LINTON of Yorkshire, and Mr. CRISP of Northumberland, for bulls in class II; for short-horn cows, Mr. J. M. HOPPER and Mr. R. BOOTH, Yorkshire, took the prizes; and for heifers the prizes were taken by Messrs. BOOTH, STANHOPE, SMITH and KIRKHAM. For Herefords, the prize-takers were Messrs. CARPENTER, HIGGINS, MONKHOUSE, WILLIAMS and ASTON, for bulls; and for cows and heifers, Messrs. WILLIAMS, ASTON, WALKER and W. F. HOBBS. For Devons, the prize-takers were Messrs. HOLE, FOURACRE, TURNER and PELHAM for bulls; and for cows and heifers, Messrs. BOND, FOURACRE, TURNER and HOLE. A list of "local prizes was awarded, which were confined to residents of Yorkshire; but the competitors were also allowed to show for any of the "general prizes." In the "local list," the first premium for short-horn bulls was given to Mr. AMBLER, and the second to Mr. THOMAS BATES. The other premiums on short-horned bulls in this list, were given to Messrs. LINTON and THOMPSON. The local prizes for short-horn cows and heifers, were given to Mr. R. BOOTH.

**THE DINNER.**—A prominent feature of most English assemblages is the dinner. It is here that, on occasions like the one to which we allude, the awards of prizes are declared, speeches are made, and the general objects of the association are discussed. At this meeting about *twelve hundred* persons sat down at one time under a pavillion 140 feet long by 84 wide. Among the company were the most distinguished and influential of the English nobility, with his Royal Highness Prince ALBERT, and several foreign ministers, among whom was our respected and able representative, Mr. BANCROFT, who was honored by a prominent position, and invited by the president to offer a toast, which was given, accompanied by a beautiful and highly-commended speech. We have not room for the whole of this eloquent speech, but cannot forego the inclination to submit the following extract:

"I rejoice," said Mr. BANCROFT, "that we live in an age when, of all the trees that are planted in the ground, the husbandman of all lands invokes the choicest blessing of Providence on the tree of peace (cheers;) praying that its root may strike to the very centre of the earth, and that it may be firmly rooted, that its boughs may but rustle in the breeze of the stormiest revolutions (loud and reiterated cheers). It is with this sentiment and this feeling I stand before you to day. The kindness of your president has favored me with a toast; but I do not, in putting myself forward as diplomatist, speak as a privileged spy (laughter.) I can only say that any one who comes, from any quarter of the world, to spy out the nakedness of the land of England, will have to go home again for his pains. He will find nothing but a united people—(loud cheers)—he will see nothing but a nation that loves English liberties, and is determined to maintain and advance them under the influence of judgment and reason, as conducting to the general prospects and public weal (loud cheers.) He will see nothing but society in the finest arch in which the keenest eye can detect no crevice. And I, gentlemen, speaking as an American—I, gentlemen, speaking as a representative of my country tell you that we rejoice in your prosperity (cheers). I should be denounced by my country if I did not utter

that sentiment (loud cheers). I tell you that the greatest delight I have had in this my happy visit to this far-famed valley—this wide, rich, vastly extended valley, which has not its rival till you pass the Alps and come upon the valley of Normandy; I tell you the greatest pleasure I have had in this visit is to see that everywhere fruits of your industry are likely to be rewarded—to see everywhere your teeming valleys promise you a redeeming harvest, before which the sorrows of the past year, which I too witnessed, will pass away like the shadow of a summer's cloud (loud and long continued cheering)."

Prince ALBERT and several noblemen made very sensible and excellent speeches, which are reported in full in the English papers. There were several meetings for the discussion of practical subjects, held during the show, of which we shall give some notice in another place.

#### Weights of Swine.

I send you the following account of the weights of sixty-two pigs and forty-five grown hogs raised and slaughtered by Mr. ANTHONY WOODWARD, of Cream-Ridge, Monmouth county, New-Jersey. Mr. WOODWARD is a young man, but an intelligent and most successful farmer. His farm consists of about 180 acres, of which he had 34 acres in corn, 34 acres in rye and wheat (principally rye) and 2 acres in potatoes; the remainder being in grass. In addition to the large number of hogs always raised by Mr. W., he usually keeps over one hundred breeding ewes and a considerable number of cows.

The pigs were eight months and two weeks old when slaughtered, and weighed from 112 to 257—averaging 166 pounds each. The grown hogs were 20 months old, and weighed from 220 to 430—averaging 317 lbs. each.

Is not the little state of New-Jersey ahead?

The amount of grain left after fattening the above crop of pork was as follows: of corn 200 bushels; of wheat 90 bushels; of rye 100 bushels; besides 275 bushels of potatoes.

For the correctness of the above statements I pledge myself; the weights having been taken down by my son, from whose memorandum I copied them. W. B. H. *Long Green, Md., July 8, 1848.*

#### Preservation of Shingles.

In your paper for July, the question is asked, "how can spruce shingles be rendered durable for roofs?"

Immerse them for 48 hours in a weak solution of corrosive sublimate, (Bi-chloride of mercury,)—and they will last longer than any shingles not so prepared, of even the best kinds of wood.

This process is called *Kyanising* after the inventor, John Kyan. Most of the timbers used at the Woolwich Dock Yard, were so prepared 25 years ago, and do not as yet show the slightest decay.

The sleepers used in the Amboy railroad, were Kyanised with a similar result. Its operation is to coagulate the sap, and thus render it insoluble, and consequently imperishable.

The cistern in which the process is conducted, should be guarded from the approach of cattle, as the solution is very poisonous. JAS. J. MAPES. *Newark, N. J., July 6, 1848.*

#### Lands in Maryland.

There is a vast amount of land here in Baltimore county, which has been exhausted by the culture of tobacco very many years since, and which has been lying out for half a century—a great deal of which may be purchased very cheaply. No land, perhaps, in the world answers so well and so promptly to a little ma-

nure as this. I have seen an old field, which was nearly bare of herbage, enclosed and dressed with about two hundred pounds of guano, produce a good crop of wheat. I have such an one this season in oats, upon which I sowed, at the time of sowing my oats, 100 pounds Peruvian guano per acre, and better oats are not often to be seen. You have many enterprising young married men who might purchase a farm here, perhaps, who would have to toil at home for many years to do so. They can purchase land at very low prices, and by paying a small part of the purchase money, in many instances get long credit for the balance. There is very little of this land which is not very easily improved, especially the isinglass [micaceous?] soil. Yours, &c., W. B. HAMILTON.

Long Green, Md., July 8, 1848.

#### Farming in Wisconsin.

A correspondent sends us the following notice of the farm of Dr. RICHARD M. MEIGS, formerly a resident of this city, but now of Waterville, Waukesha county, Wisconsin. "Dr. M.'s farm contains 349 $\frac{3}{4}$  acres, of which 60 acres are now in wheat, 8 in oats, 4 in corn, 2 in ruta bagas, 6 in rye, 8 in barley, together with a large garden. Sixty acres have been broken this summer for fall wheat. On purchasing, the land already broken up had been cropped with wheat for six years in succession, and so reduced as to yield scarcely the seed. Dr. M. is known by Albanians as a practical horticulturist, and especially devoted to the raising of the grape—taking premiums for several years at the Albany Co. Hort. Society. He has a few vines from the nursery of John Gott; 190 peach trees from the same gentleman, planted from the pit a year ago last fall, which are now four feet high. Locust trees from Wm. N. Strong, taken from Kane's Walk, in Pearl st., Albany. His orchard, comprising varieties of apples, looks well. The coming year, he will pay more attention to spring crops, and prepare 60 or 80 acres for fall wheat, in addition to what is already under the plow. Wheat is in fine order, and is now being harvested. Barley has been cut. Every kind of spring crops never looked better. His barley and oats have been estimated to exceed 60 bushels to the acre, and by some to attain 70 bushels—all from old land." July 18, 1848.

#### Use of Cotton Cloth in Curing Hay.

[We have been favored by A. A. LAWRENCE, Esq. with the following letter from Col. PIERCE, of Greenland, N. H., one of the largest and most successful farmers in New England. It affords some valuable information. We have formerly known cloth caps for hay used with advantage.—Eds.]

A. A. LAWRENCE, Esq.—Dear Sir,—I take pleasure in replying to your inquiries about the "Hay Caps" made from your Salmon Falls Sheetings.\* They have fully answered my expectations, preserving the hay perfectly, both through long rains and heavy showers; not only saving a great deal of labor in shaking the rain out of the hay, but preserving all its good qualities, especially that agreeable aromatic perfume, which is always lost when much wet.

I am indebted for the hint of this valuable improvement in haymaking, to a piece published in the *Boston Cultivator*, June 5, 1847, extracted from the *Maine Farmer*. Those there described were made of cloth thirty inches wide and were five feet square, which are too small. Those which I have made of your yard-wide sheetings, two yards square, are as near right as can be. The two breadths are sewed together with a stout hem at the ends, the corners turned back about

two inches and sewed down strong, leaving a loop through which is run a stout string of the kind called marline, the ends tied so as to make a loop of an inch and a-half in diameter; through each of these is run a stick of eighteen or twenty inches in length into the hay, standing it up to prevent the loops from slipping off; the haycocks should be made higher than usual and the cloth drawn tight.

The cost is about thirty cents each, namely four yds. of sheeting at seven cents and two cents for line and thread; the making, if done at leisure hours in a family, will cost little or nothing.

Upon the whole, with the experience I have had of their usefulness, I would not be without them if the cost was double what it has been. Yours truly, J. W. PIERCE. Greenland, N. H., August 3, 1848.

P. S.—I have waited several days to see the result of the last trial of the caps which we put on last Saturday afternoon—the weather at the time being very fine and promising well. We had about 350 cocks in the field; about 100 were not covered; on Monday it rained all day, the next day, the hay that was not covered was opened, dried, and got in at night; that under the caps was left, being safe, to be got in at leisure; which was done the next day with as little labor as that of the day before, though nearly three times the quantity, and in much finer condition—indeed the rain had no effect upon it.

The 30 inch drillings would not answer a good purpose, and I am not certain, if I were going to have more of them, but that I should prefer cloth still wider than your sheetings, but I am perfectly satisfied with what I have.

I have saved my hay three times already, and those which are washed free from starch, answer equally well as when first used.

#### Management of Hens.

I want information in regard to the best mode of making hens lay eggs. I have about four hundred hens in my yard, and they do not lay as well as they ought. I want instruction as to how the yard should be fixed, and how they ought to be kept, and how to pack eggs to keep them from spoiling. If I can adopt some plan to make the hens lay well, I intend to buy a thousand or two thousand chickens this fall, and buy many eggs the coming spring. You now understand my business, and see the subject upon which I want information. A. J. MEARS. Hubbard, Ohio, July, 1848.

We shall be glad to receive the suggestions of any of our experienced correspondents in relation to the above subject. Eds.

#### Loss in Burning Bones.

I would be glad to know what is the amount of loss in calcining bones. If I am not mistaken, Liebig says none of much consequence to the farmer. Johnston, in his *Agricultural Chemistry* supposes the loss very great, and in Allen's *American Agriculture*, burning bones is called a *very wasteful practice*.

If bones from which the oil has not been extracted are thrown into a heap, they readily burn, so that many fall into powder and the rest are easily crushed. If in this process, they really lose nothing very valuable as manure, or if they do not lose more than twenty-five per cent, it would be by far the most economical mode for all farmers, who can collect bones at the ordinary prices given at the bone mills. As regards myself, this may be easily shown—

Cost of bone-dust in Baltimore, ..... 50 cts. pr. bush.  
Bags, freight and drayage to York, .. 10 " "

\* The sheetings weigh 2 $\frac{3}{4}$  yards to a pound.



Cost of collecting bones, per ton, \$7, which will make, when crushed, about 35 bushels, or 20 cts. per bushel; cost of burning and crushing 5 cts. per bushel: 25 cts. per bushel, or rather for what would have been a bushel of crushed without burning, for the bulk is very much reduced in burning, but if the value remains, mere loss of bulk is an advantage.

I have a machine for pounding bones by hand, upon which two hands will pound to the usual fineness, eight bushels a day in dry weather, taking the bones just as collected, boiled and unboiled. This makes them cost about thirty-seven cents a bushel. The price will do, but it is very slow and troublesome compared with burning. If the simple question, *what amount of loss* do bones sustain for agricultural purposes by burning them until they *fall to powder*? could be answered through the columns of the *Cultivator*, I doubt not many would be benefited, and myself among the number. EDWARD JESSOP.

[We would refer our correspondent to the remarks of Prof. JOHNSTON, in the article on the use of bones as manure, in this number. Eds.]

#### The State Fair at Buffalo.

The Secretary of the Society will be in attendance at the rooms of the officers at the Mansion House, where all applications will be attended to up to the fourth of September. The officers will meet at the rooms mentioned each evening during the fair, where they will be happy to see any of their agricultural friends.

On Monday, the fourth of September, the business office at the show-grounds will be opened, where entries are to be made, and members will receive their badges.

The executive committee will meet Tuesday morning, September 5th, at ten o'clock, in the great tent, on the show-grounds, for the purpose of filling vacancies in adjudging committees. Members of committees are desired to be present on the morning of the 5th, and report themselves to the Secretary.

The chamber of the Common Council, Buffalo, a large and spacious room, has been secured for the Pomological Convention, which will meet on Friday the first of September, and continue during the Fair.

For the evening meetings during the Fair, the Lecture room of the Young Men's Association, and the Court-house, have been engaged; and other places will be designated, if necessary. Professor J. P. Norton of Yale College, will deliver an address at one of the evening meetings; and on another evening, Prof. A. H. STEVENS, M. D., of New-York, will speak on the subject of the claims of Agriculture on the Treasury of the State. Dr. D. LEE of Rochester, and Rev. J. O. CHOULES, of New-Bedford, will also give addresses during the meeting of the Society. Several other gentlemen may be expected to speak.

The Railroad Companies will issue tickets to go and return at half the usual fare. They can be obtained at the offices of all the companies, and may probably be had as early as Saturday preceding the Fair. Stock and articles will be carried free, and will be taken at *any time*, on notice to the several companies, so that cars may be ready. Application in relation to transportation by railroad may be made to the following persons:—E. FOSTER, Jr., Albany; L. R. SARGEANT, Troy; G. W. YOUNG, Schenectady; T. M. FRANCIS, Utica; J. B. BURNET, Syracuse; J. M. SHERWOOD, Auburn; E. J. BURRALL, Geneva; JOS. ALLEY, Rochester; E. C. DIBBLE, Batavia; T. C. PETERS, Buffalo.

The various public and boarding houses in Buffalo, have agreed to charge customers, during the Fair, the customary rates only.

#### American Institute.

The agricultural and horticultural departments of the exhibition of this association for the present year, will be opened on Tuesday, October 3d, at Castle Garden, New-York. Vegetables, fruits and flowers designed for exhibition, must be brought to the rooms and arranged the day previous—(Oct. 2.)

Plowing and spading matches will take place on Thursday, the 5th of October, at White Plains, Westchester county.

The central convention of Fruit-Growers, called by a notice from the committees of the Massachusetts and the Pennsylvania Horticultural Societies, and the committee of Agriculture of the American Institute, will meet at Judson's Hotel, No. 61 Broadway, New-York, on Tuesday the 10th of October, at 10 o'clock, A. M. The objects of the convention are to compare fruits from various localities; to determine synonyms by which the same fruit is known; to compare opinions respecting the value of varieties of fruit now in cultivation; and to elicit and disseminate pomological information. Persons are requested to bring with them to the meeting, different kinds of fruits, carefully packed and labelled, accompanied with memoranda in regard to the soil in which they grew, and facts in regard to their culture.

The cattle show will take place on Wednesday and Thursday, the 11th and 12th of October, at the Washington Drove Yard, on Forty-fourth street, between Fourth and Fifth Avenue. All entries under this head must be made, and pedigrees delivered, on or before Monday Oct. 9th. They may be sent to T. B. WAKEMAN, Esq., Secretary of the Institute, New-York.

#### Value of the Potato.

Prof. C. U. SHEPARD, in his address before the agricultural societies of Hampden and Hampshire counties Mass., made the following excellent remarks in regard to the potato:

"The potato is a vegetable which the rich man knows not how to forego; and one which places the poor man above want. With a shelter from the weather, and one or two acres of ground to plant with this tuber, man may subsist at almost any distance from the miller, the baker, the butcher, and, I may almost add, the doctor. It suits all tastes, flourishes in nearly all climates, and is eminently nutritious and healthful. Its cultivation demands but little labor, and when the earth has ripened the tubers, they are harvested without trouble, and cooked without expense. A few faggots in summer will boil them, and in winter the necessary heat is supplied without expense. There is no waste of time in the processes of milling, sifting, kneading, baking, seasoning, jointing or carving. There is nothing deficient nor superfluous in a well boiled potato. As soon as it is cooked, it opens by chinks, lets fall its thin pellicle upon the platter, and with a little salt, butter or milk, is ready for the unfastidious appetite of the hungry man. Start not back with surprise at the idea of subsisting upon the potato alone, ye who think it necessary to load your tables with all the dainty viands of the market, with fish, flesh and fowl, seasoned with oils and spices, and eaten perhaps with wines,—start not back, I say, with feigned disgust, until you are able to display in your own pampered persons, a finer muscle, a more beau ideal outline, and a healthier red than the potato-fed peasantry of Ireland and Scotland once showed you, as you passed their cabin doors! No; the chemical physiologist will tell you, that the well-ripened potato, when properly cooked, contains every element that man requires for nutrition; and in the best proportions in which they are found in any plant whatever. There is the abounding supply of starch, for ena-

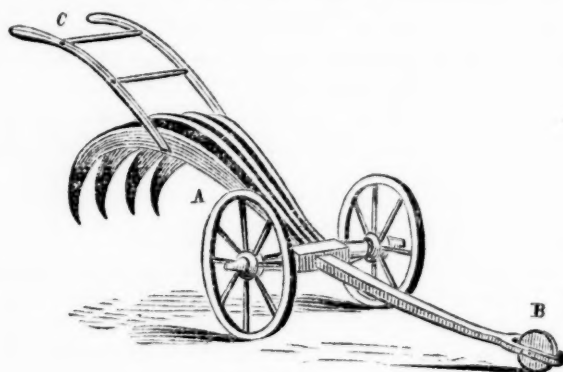
bling him to maintain the process of breathing, and for generating the necessary warmth of body; there is the nitrogen for contributing to the growth and renovation of organs; the lime and the phosphorus for the bones; and all the salts which a healthy circulation demands. In fine, the potato may well be called the universal plant; and the disease under which it now labors, is an universal calamity. If any agricultural institution should ever be so fortunate as to make us acquainted with the means of controlling it, its name would quickly rank by the side of the proudest universities, and if the great discovery should proceed from a single individual, his name would live when those of the greatest generals and conquerors have become as uncouth and strange to human utterance as their deeds were unfriendly and opposed to human happiness."

#### Principles of Breeding.

At the late meeting of the Royal Agricultural Society, lectures were given by persons previously appointed, on various subjects connected with agriculture. Discussions of similar subjects were likewise held, at times when the members of the Society were not otherwise engaged. We think the feature a good one, and shall be glad to see it adopted by societies in this country. On the occasion above referred to, Prof. J. F. W. JOHNSTON delivered a lecture on the applications of science to agriculture. Another lecture was given by Professor SIMMONDS, of the Royal Veterinary College—the general subject, the parturition of cows and sheep; but in his preliminary remarks, he made some valuable observations on the principles of breeding, of which we give the following, from the *Marklane Express*:

"Breeding with a view to improvement, might be said to be founded on nature's established law that like produced like. This was only true in part, for there was a constant tendency to change, arising from a variety of causes; such as domestication, living in a different climate, or on a different kind of food. The management to which animals were subject, had its influence. While those might be looked upon as the chief causes in operation to produce this constant change, at the same time they were means (added to others) which were used to effect an improvement. In order to improve the breed there were two plans, advocated by two sections of practical breeders. One was commonly called the 'in-and-in system,' the other the crossing plan. The in-and-in system originated from Mr. Bakewell, and it had at least the effect of destroying the prejudice which had existed against breeding from animals having a relationship. But the system had a tendency after a time to deteriorate the breed; in fact it might be said to be limited, so far as its benefits were concerned. Every improvement of breed required the application of the same means to retain it which produced it; the chief of these was care in the selection of stock, so as to avoid a tendency to hereditary disease. Crossing was founded on a principal just as secure as Bakewell's principle of care in selection, added to the in-and-in system. Certain diseases were hereditary, and so was color, and they could only get rid of this color and this predisposition to disease by crossing. Still this crossing required care in selection. Mr. Simmonds illustrated this peculiar tendency to propagate disease or defects, by referring at some length, to the fact of the large proportion of horses in Yorkshire known as 'roarers.' Animals bred from these 'roarers' had a peculiar susceptibility to the disease, and if one of these Yorkshire horses was exposed to the ordinary causes of disease, the peculiar defect would be found developed, while other horses similarly exposed would escape. What was true with regard to horses is as true in regard to cattle, sheep, and all domesticated animals.

The tendency of *like to produce like*, Mr. Simmonds illustrated, by referring to the results of crossing various breeds of cattle, such as Devons with Herefords, both the color and form of the parent animals being thereby altered or modified. In a state of nature the tendency to change was not observed to the same extent as in domesticated animals; therefore in a state of nature degeneration of a thing did not take place to the same extent as among the same breed when domesticated. The lecturer then passed on to remark upon the importance, in crossing animals, of suiting the male to the mind or taste of the female. Some might smile at this notion, but Mr. S. showed, by several facts, the importance of paying attention to this point."



Root Puller.

The above is a root puller as I would propose to construct one. The centre-wheels, A A are light and so placed that the puller balances on their axletree in such a way, that the heaviest part rests on the cast-iron roller B; the man who holds the handles, C, walks through the clearing as if he were plowing; and whenever he meets a shrub or bush which is to be removed, he presses on the handles and the points of the Puller enter the ground behind the roots, while the pulling of the team will lift the whole forepart of the implement up till the desired extraction is accomplished.

I think this an improvement on the common way of dragging the puller about wherever it might be wanted. ALB. C. RICHARDS. June 29, 1848.

#### AUTUMN.

How dear to roam along the sunny hills,  
When Autumn spreads her bounties on the plain;  
When Industry his garnered treasure fills  
With richest stores from fields of ripened grain;  
When slow across the fields the ponderous wain,  
Deep laden with the yellow ears, is drawn,  
While from wide trees that overhang the lane,  
The ripe red apples, shaken down at dawn,  
Lie scattered thick and far along the level lawn.  
The winding rill along the sunny vale  
Sings its sweet song to cheer the reaper's heart;  
And oft its voice the pensive autumn gale  
Will join and cause the rustling leaves to start;  
While scores of screaming blackbirds bear their part,  
With varied notes, yet full of melody;  
And troops of noisy boys, with dog and cart,  
Are hasting to the hills with youthful glee,  
To shake the clustering nuts from the tall walnut tree.  
But soon this beauteous pageantry shall fail,  
And every mellow tint of Autumn fade;  
A melancholy murmur fills the gale,  
And sorrow saddens o'er the yellowing glade;  
Through thickening clouds the suns of autumn wade,  
And beauty sets upon the hills no more;  
The verdure of the wood is prostrate laid,  
And soon the Autumn rains begin to pour,  
And down the craggy rocks the swelling torrents roar.  
Such is the fortune of majestic man!  
The leaves of fragrance round his forehead flow,  
The laureate wreath, that gales of fortune fan,  
For which he climbed so high or stooped so low;  
But soon approach the tempest clouds of woe,  
To mar the beauty of his brightest deed;  
Yet while he mourns his fortune's overthrow,  
He looks to heaven for some more glorious mead;  
Thus to the autumn winds I tune my Dorick reed. [Selected.]



**Domestic Economy, Recipes, &c.****Yankee Brown Bread.**

Two quarts of Indian meal.  
Two quarts of rye meal.  
Three pints of milk or water.  
Two teaspoonfuls of salt.  
Half a pint of strong fresh yeast.

Having sifted the rye and Indian meal into a large pan, mix them well together, adding the salt. Boil the milk or water in a sauce-pan, and when scalding hot pour it on the meal, and stir the whole very hard. If too stiff, add a little more warm water. Let it stand till it becomes only of a lukewarm heat, and then stir in the yeast. Knead the mixture into a stiff dough, and knead it long and hard for at least half an hour. Then cover the pan with a thick cloth that has been previously warmed, and set it near the fire to rise. When the dough is quite light, and cracked all over the top, take it out of the pan; divide the mass in half; make it into two loaves; knead each loaf well for ten minutes or more; and then cover and set them again near the fire, for half an hour. By this time have the oven ready, put in the loaves directly, and bake them at least an hour and a half. This bread is considered very wholesome.

Should you find the dough sour, you may rectify it by kneading in a teaspoonful of pearlash, dissolved in a little warm water.—*Selected.*

**Small Beer.**

The receipt below for making *small Beer* for this hot weather, is too good to remain so little known. If you are disposed to insert it in your paper, you may promote the comfort of your friends and the cause of temperance.

For making 3 gallons of Beer or 1 pail full,—Take  
1 quart West India Molasses,  
20 drops Oil Spruce,  
15 “ Oil Wintergreen,  
10 “ Oil Sassafras,

Fill the pail with hot water—mix them well—let it stand until it has become blood warm—then add one pint yeast—let it remain 10 or 12 hours—bottle it—and in three hours it will be fit for use, and first rate.

**BEEF-TEA**—When one pound of beef, free of fat, and separated from the bones, in the finely chopped state in which it is used for beef sausages or mince meat, is uniformly mixed with its own weight of cold water, slowly heated to boiling, and the liquid, after boiling briskly for a minute or two, is strained through a towel from the coagulated albumen, and the fibrine, now becoming hard and horny, we obtain an equal weight of the most aromatic soup, of such a strength as cannot be obtained, even by boiling for hours, from a piece of flesh. When mixed with salt, and the other usual additions by which soup is usually seasoned, and tinged somewhat darker by means of roasted onions or burnt sugar, it forms the very best soup which can in any way be prepared from one pound of flesh.—*Liebig.*

**HARVEST DRINK.**—Ten gallons of cold water, 1 gallon of molasses, 1 qt. of vinegar, and  $\frac{1}{2}$  lb. of ginger, well stirred together, makes a refreshing drink. Try it. Spirituous liquors, are, as they ought to be, almost entirely banished from the harvest field.

**ARTIFICIAL ICE.**—It is said that a mixture of four ounces of nitrate of ammonia, and four ounces of sub-carbonate of sodium with four ounces of water in a tin vessel, will in three hours produce ten ounces of ice.

**To make a Minute Pudding.**—Stir flour into boiling milk, to the consistence of a thin hasty pudding, and in fifteen or twenty minutes it will be fit for the table.—Serve with sauce, to suit the taste.

**Answers to Inquiries.**

**“INSECT IN WHEAT.”**—A. E., Cicero, N. Y. The insect forwarded by you is the Hessian fly, (*cecidomyia destructor*;) in the flax-seed state.

**CUTTING STRAW AND CORNSTALKS.**—J. B. For cutting hay and straw we should prefer Hovey's or Stevens's cutter; for cornstalks, if they are to be mashed fine, we should prefer Wheeler's. Prices from \$10 to \$25, according to size—the latter for horse power.—All kinds can be had at the Albany Agricultural Warehouse.

**PEATY MOULD.**—A. C. R., Walden's Ridge, Tenn. We think the peaty mould you describe could hardly fail to be useful to soil deficient in organic matter, as yours appears to be. The specimen you sent has been examined by Mr. SALISBURY, assistant to Dr. EMMONS, who finds it to contain in 100 parts,—organic matter 39.80; water, 1170; silice, 40.10; alumina, peroxide of iron, with a trace of phosphates, 4.50; lime, 0.65; magnesia, a trace.

**SOILING COWS.**—Erie county, N. Y. In answer to the question, which is most profitable, to feed cows in the yard or pasture them, through the summer? we should say that where land is so cheap as it is in your section, it would probably be cheapest to pasture them. As to the next question, which we should prefer for feeding, lucerne or clover? we answer, lucerne—that is, we think lucerne best, but it is not so easily grown on most soils. Unless you have a very rich, deep, loamy soil, it would be safer to try clover. It will require from a half an acre to an acre of land per cow, according to the quality of the soil, and the productiveness of the season.

**PATENT OFFICE REPORT FOR 1847.**—G. P. P. One hundred and fifty thousand copies of this report were ordered published by Congress for gratuitous distribution. It is probable copies can be obtained by addressing any Senator or Representative.

**LOCUST-TREE BORER.**—Addison, N. Y. There are three species of borer which attack the locust-tree. They are sometimes very destructive, and kill many trees which stand in exposed situations. The best prevention of them which we have known, is to set the trees in compact form, making a dense grove of them. We have seldom seen those so situated much injured, except a few of the outside trees. If any one can suggest a better remedy we should be glad to hear it.

**CANKER-WORM.**—C. C. H., Cornwallis, N. S. The most common mode of preventing the ravages of this insect is tarring the trees. As they sometimes appear in the fall or early winter, if the weather is favorable, and ascend the trees, where they deposite their eggs which are hatched the ensuing spring, the tarring, to be effectual, must be applied at that season as well as in spring. The tar is injurious to the trees, binding the bark and checking the circulation of the sap; to prevent which it is best to fasten round the tree a belt of old canvass or coarse cloth, first applying to this a coat of clay wash to prevent the tar from striking through, and afterwards tarring on that. The tar should be made soft by adding cheap oil, and should be applied with care every evening just before dusk, as the insects move principally in the night. Circular troughs of lead, in which oil is to be kept, have been contrived to put round the trees; but we are not able to say whether they have been found so useful as to supercede the use of tar. Plowing the ground around trees infested with canker-worms, late in the fall, and thus exposing the insects, many of which are then in the crystal state, to the action of frost and air, has been found useful.

## MONTHLY NOTICES—TO CORRESPONDENTS, &amp;c.

COMMUNICATIONS have been received since our last from Many Subscribers, W. B. H., J. P. F., A Subscriber, Jas. Mapes, E. M. Cramer, H. C. B., W. R. Smith, Alb. C. Richard, E. C. Frost, Edward Jessup, H. W. S. Cleveland, C. E. G., W., E. A. G.

BOOKS, PAMPHLETS, &c., have been received as follows: Report of the committee on Agriculture in the House of Representatives, from the writer, the Hon. J. I. SLINGERLAND.—Thompson's Coin Chart Manual, containing 613 fac-similes of gold and silver coins.—Annual Report of the Mahoning County (Ohio) Agricultural Society, from J. M. EDWARDS.

POTATO DISEASE.—We have received too late for this number, a communication on this subject from C. E. G. He states that the disease has made its appearance in the neighborhood of Utica. It has also appeared in this vicinity, and many other parts of the country; but to what extent it will injure the crop, cannot yet be ascertained. We have seen some lots early planted, that were already more than half destroyed.

PROF J. F. W. JOHNSTON.—We are authorised to state that the Secretary of the N. Y. State Ag. Society has received a letter from Prof. JOHNSTON, in which he says that owing to the pressure of business on his hands at the present time, he has concluded to postpone his contemplated visit to the United States till next year, when he hopes to spend several months among us.

"HONORABLE TESTIMONY."—The late ELIJAH WILARD, Esq., of Jonesborough, Illinois, a subscriber and correspondent of the Cultivator, directed by his will, that four entire sets of the work—fourteen volumes each—should be purchased and presented to the farmers in the neighborhood of his late residence. We acknowledge the reception of the order, which has been filled—the volumes being bound in uniform style.

BLUE BUCKWHEAT.—MR. LOTAN SMITH, of Liberty, Sullivan county, N. Y., has left with us for distribution a sample of grain known by this name. He states that it is a surer crop than common buckwheat, and will make more flour to the bushel—is not injured by hot sun, and can be safely sown by the 20th of June.

DEVON CATTLE.—The attention of those wanting this valuable kind of stock, is invited to the advertisement of Mr. COWLES, in this number. He has taken great pains in the selection of his breeding animals, and has many good specimens of the breed.

PRODUCE OF ONE GRAIN.—MR. KIRTLAND, of the Cantonment Farm, Greenbush, has left with us a bundle of straws, the product of a single grain of Multicole rye, the present season. There are 124 stalks, with fair heads. The grain came up last spring, and in consequence of standing by itself, and being later than the fall-sown rye of the same kind, it did not fill well; but the number of stalks indicates an astonishing reproductive power.

FITZGERALD'S PORTABLE BURR-STONE MILL.—We have lately witnessed the operation of this mill by horse-power. With one of Wheeler's powers, moved by one horse, it ground corn and oats sufficiently fine for "feed," at the rate of from four to five bushels an hour. We saw the same mill tried for grinding wheat—steam being applied to it, with a three-inch belt. Two bushels of very hard wheat were well ground in thirty minutes. There are bolts belonging to the mill, by which excellent flour can be made.

STAFFORD'S PROCESS OF DRYING GRAIN.—In our June number we spoke of this invention. Mr. STAFFORD has since sent some corn-meal, prepared in his way, to the Secretary of the N. Y. State Ag. Society, for distribution. We have tried it, and found it excellent, both for bread and puddings.

LAWRENCE SCIENTIFIC SCHOOL.—We are pleased to learn that this very important and valuable branch of Harvard University, continues to receive the well-deserved countenance and encouragement of the public. The chemical department is under the charge of Prof. E. N. HORSFORD, whose interesting letters from Germany, while he was a student in the celebrated Giesesen Laboratory, and many other able articles from his pen, have been read with much satisfaction by the readers of the Cultivator. Lectures will be given on zoology and geology, as heretofore, by Prof. AGASSIZ. The term commenced on Monday, the 28th of August. The general course of instruction will be essentially the same as was pursued last term, of which we gave some notice in our current volume, page 127—(April number.) Particulars can be ascertained by applying to Prof. HORSFORD, at Cambridge.

ATMOSPHERIC CHURN.—We have witnessed the operation of a churn by this name, said to have been invented and patented by JOHNSON & LEWIS, of Sangamon county, Illinois. Its chief peculiarity consists in forcing atmospheric air through the cream or milk, by means of a hollow upright shaft, having holes in the upper end, to the bottom of which is attached a transverse tube, open at each end—the latter being made to revolve horizontally through the cream by means of gearing attached to the shaft. The turning of the shaft causes the descent of the surrounding air, which passes through the cream, and escapes from its surface in the form of bubbles. It is claimed that butter can be produced by this churn, from cream, in less than five minutes, and from new milk in fifteen. In the trial which we witnessed, butter was produced from cream in seven minutes, and from milk in nine. MR. EMERY was present with one of Kendall's churns, and produced butter from cream in ten minutes. An equal quantity of cream was used by both churns—the Atmospheric produced one pound of butter, and Kendall's one pound seven and a half ounces. Such was the result on this trial—how it would be on other trials we cannot say; neither can we say positively, what was the occasion of so great a difference in the amount of butter produced by the two churns. The Atmospheric churn appears to operate on a correct principle—that of mingling the air with the cream; but we are not in favor of such rapid churning. Having formerly had some experience in making butter, we should prefer that the churning, for a quantity of ten to twenty pounds of butter or more, should be prolonged to thirty minutes, at least. According to our experience, the best butter is not produced by a very short nor a very long period in churning. If it is churned too quick, the separation is not complete, and the butter, besides being less rich, is deficient in quantity; if the process is continued too long, the butter is likely to be oily. We think our best butter makers would decide that churning for ordinary quantities, should occupy from thirty to fifty minutes.

CHEESE AND EXPORTS.—Herkimer county, N. Y. has produced 8 million pounds of Cheese annually. St. Lawrence 9 million, and the whole state, according to the



census of 1835, 36 millions. The amount received at tide water on the Hudson, has increased from 1834 to 1846, from six million to thirty-five million. From 1840 to 1846, the amount exported has increased from 700,000 to 8,600,000 lbs.

**RECLAIMING WORN-OUT LANDS.**—A correspondent at Manchester, Ct., whose signature is J. P. F., states that he bought a tract of land which had been considered nearly worthless. He expended in hauling peat on it, and for one thousand bushels of ashes, about five hundred dollars, and he states that the fall feed, last season, was worth the interest of the outlay, and that the prospect the present season is more favorable, affording good encouragement for the improvement of Connecticut worn-out lands.

**SOUTH-DOWN SHEEP.**—At the late letting of Mr. JONAS WEBB's South Down rams, Cambridgeshire, Eng. 67 were let at an average price of £23 10s. (\$117.50) per head, for the season. One lot for £79 (395,) and three yearlings at an average of £60 (\$300) each, for the season.

**MR. COLMAN.**—The occasion mentioned in the above paragraph drew together an assemblage of more than two hundred agriculturists and gentlemen from various parts of Britain. Our countryman, Mr. COLMAN, who had just returned from a long agricultural tour on the Continent, was present, as was also another American gentleman, Mr. BASSETT. In reply to a complimentary toast by the chairman of the meeting, LORD HARDWICKE, Mr. COLMAN made an eloquent speech which was received with cheering applause. He alluded to his continental tour, and said the best agricultural district he had passed through was Flanders. The great success of the system there pursued, he thought was attributable to the saving and application of urine. He spoke of the beet culture which he had seen in France; he thought it very profitable. The refuse, after the root had passed through the process for sugar making, was very valuable for feeding stock. He saw in June last, a large lot of cattle and sheep which were fattening from the refuse of the crop that had been used for sugar the previous fall, and the animals were in fine condition. As to improvement in live stock, however, Mr. C. thought it was "clear as the light of day," that the farmers of England "were not only a whole head, but a whole length, before all other countries!" He closed by some happy allusions to the peaceful relations existing between England and the United States.

**CHALLENGE.**—MR. THOS. BELL, of Morrisiana, Westchester county, N. Y., offers to show his Durham bull, *Marius*, at the State fair at Buffalo, against any Durham bull that has been previously awarded the first premium of the New-York State Agricultural Society, for \$50 to \$100 a side. The judges to be named on the ground, and to be not less than three in number. This bull was bred in England by the late Earl Spencer. He will be offered for sale at the Fair, under the direction of the officers of the New-York State Agricultural Society. Mr. BELL had limited the time of the acceptance of this challenge to the 20th of August, but we hope he will conclude to leave it open till the first day of the State Fair—September 5th.

**NORMANDY CATTLE.**—The editor of the *Maine Farmer* inquires of the editor of the *Massachusetts Plowman* in regard to a bull and two cows, supposed to have been imported from Normandy by the Massachusetts Society for Promoting Agriculture, about the years 1817 or '18. The *Plowman* calls for "information" in regard to the stock. As an "outsider," we would inquire in the first place whether the Society ever imported any such animals? The Journal of the Society for 1817, states that two cows and a bull had been ordered, but we never heard of their arrival. Hon. JOHN

HUBBARD, imported a Norman or Alderney bull, which he presented to the Society alluded to. In 1823, the writer saw this bull at the society's show at Brighton. He was then two years and a few months old. He was offered for sale at auction, but as a satisfactory price could not be had for him, he was bid in by one of the officers of the Society. He was kept for several years by the late JOHN PRINCE, Esq., of Roxbury. He was of a light chestnut color, of slender and rather loose make, indicating a feeble constitution. Mr. PRINCE and other gentlemen imported cows of the same breed, about the same time. We several times saw these cows,—or some of them—their progeny, and also some of the half-blood progeny of the bull. They seemed generally deficient in constitution. The cows, however, produced some good stock by bulls of other breeds. We recollect particularly, seeing at Mr. PRINCE's some fine calves and young stock, some of which were a cross from the Norman cows by the imported bull *Holderness* or *Fortunatus*, and some a cross from the Hereford bull, *Sir Isaac*, sent out by Admiral COFFIN.

**WIRE WORM.**—A successful farmer of this vicinity, Mr. D. D. T. MOORE, states that he has tried various substances for preventing the ravages of the wire worm, none of which, excepting sulphur, proved of any use. An Irishman told him that sulphur had been used with advantage in Ireland. Before planting his corn, Mr. M. wet it and rolled it in flour sulphur, and afterwards coated it in plaster to prevent the sulphur from wasting. He saved a crop by this means where he had failed for three years before. We see no reason why the sulphur might not be equally effective for any other grain.

**SUBSOIL PLOWING.**—Clark Beardsley, of Avon, Mich. states in the *Michigan Farmer*, that he harvested wheat on ten acres of good wheat land in 1844, which had been much run for 17 years, and the product was only eighty-five bushels. The soil was clay and was full of "foul stuff." The next year he subsoiled it with a span of horses and two yoke of oxen, by once plowing, and thoroughly subdued the foul stuff, and obtained in 1846, from the same ten acres of land, over three hundred bushels of wheat. And yet we know a farmer of large and ample means, who admits that the subsoil is more fertile for wheat than the upper soil, who says he "cannot afford" to use the subsoil plow!

**TALL CORN.**—DR. LEE writes to his associate of the *Gen. Farmer* that the corn on the Savannah bottoms was "from 12 to 18 feet high." His friend inserts a note stating that he suspects there is "some mistake in the figures," but he "follows copy." We have seen corn in Western Virginia, and in Ohio, which was taller than the Doctor mentions, and once measured a stalk taken from a field belonging to SETH BAILEY, a few miles below Marietta, on the Ohio river, which was *nineteen feet two inches* in length, cut even with the surface of the ground. We presume such evidence of this fact could be had as would be received in a "court of justice."

**"DO TOADS SING?"**—Our friends of the *Prairie Farmer*, in answer to this question, proposed by a correspondent, say, they "never heard a toad sing, or of one's singing;" but they think "frogs do little else." There may be some doubts as to what should be called singing. People have different musical tastes, as was illustrated by the old story about the "heavenly music" made by a pack of hounds. Now frogs and toads, (we don't mean tree-toads, everybody knows their trills,) both make a noise—probably from the same impulse—and we are not aware of any rules that would recognise the one as singing and reject the other. If our friends will secure some well-grown toads at the "pair-

ing season," or about "planting time," and let them loose at the dusk of evening, they will quickly have the satisfaction of listening to the "notes" of the "harsher sex." They swell out their throats till the sound bursts forth with almost as much "power" and "compass" as that of a fashionable *biped* "performer." We have *seen and heard* all this.

**ANNUAL ADDRESS AT THE STATE FAIR.**—The Hon. JOHN C. SPENCER, of Albany, has consented to deliver the customary address before the New-York State Agricultural Society, at the meeting at Buffalo.

**"THE PLOW, THE LOOM AND THE ANVIL."**—An advertisement of this publication will be found in this number of the *Cultivator*. Its senior editor, J. S. SKINNER, Esq., is well known as the pioneer in the establishment of agricultural periodicals in this country, having started the *American Farmer* in 1819. He still wields a vigorous and ready pen, and we have no doubt will render the work alluded to worthy the public patronage, which we trust will be liberally bestowed.

**MATERIALS FOR MANURE.**—During the dry weather of September and October, the farmer will find his account in collecting muck or peat, and such loose vegetable matters as are to be had, for the purpose of covering his barn-yards to absorb the urine from his stock and prevent the waste of the liquids from the manure. Excepting while the weather is very cold, peat or muck, if kept tolerably dry, may be used in the stables, and by absorbing the liquids, converts them into a portable form, and by retaining the nitrogenous principles, and adding them to the compost-heap, a proper decomposition of the mass is secured. Thus a valuable article, which would otherwise be wasted, is saved, and its addition to other materials increases *their* value also. A good supply of peat and articles for litter should be so cured before winter sets in.

**THOMPSON'S BANK NOTE REPORTER.**—We have received this periodical several years, and consider it almost indispensable to business men. It contains a complete list of all the banks in the United States and British Provinces, with lists of Counterfeit bills, rates of exchange, &c. It is published daily, weekly, semi-monthly and monthly—weekly \$2 a year—twice a month, \$1, and monthly, 50 cents. Address J. Thompson, Exchange Broker, 69 Wall-st., New-York.

**GUINEA GRASS.**—In the *Cultivator* for 1845, page 210, "B. M." of Tuscaloosa, Ala., recommends the culture of this grass "for the south." In the Southern *Cultivator* for August last, the same writer states that he is convinced by two years' experience, that "*it is a very serious pest,*" and he is therefore, desirous of publicly retracting the recommendation he had before given. He states that it does not make good hay, and that it takes such firm possession of the ground that it is almost impossible to eradicate it.

**SEEDING GRASS LANDS.**—September is a favorable season to sow grass seeds. In many sections, grass or hay yields a more profitable return than any other crop, and it hence becomes an object to keep the lands in mowing or pasturage as long as practicable. On quite moist soils, the sward may be kept up, and the production of herbage continued without diminution, by occasional top-dressings of manure. But on drier soils, it often becomes necessary to renew the grass from seed. In order to avoid the loss of a crop, it is practised in such cases, to plow the sward soon after the hay is taken off, with a level, smooth furrow, and after using a light, sharp harrow, to sow the grass-seeds and brush them in. The time of sowing may vary according to the state of the ground. If very dry, it is best to wait for rain; but if sufficiently moist to insure the germination of the seed, the latter part of August or fore

part of September is generally considered the best time. Yet we have known lands sown to grass, as late as October, with good success. If the weather during fall is favorable, the grass gets so well set that it stands the winter, and grows well with the opening of spring. The first crop is however, considerably later, though it often gives a good burden at the first mowing. It is proper to remark that this mode of seeding is not recommended for lands that are much acted on by frost; that is, lands on which crops are liable to "winter-kill."

**KYANIZING WOOD.**—The *Kennebec Journal* states that an establishment for carrying on this process has been erected at Augusta. The timber is first placed in iron boilers about fifty feet long, and steam is applied to it. The steam is then condensed by ejecting cold water, thus producing a vacuum and opening the pores of the wood; after which a solution of coal tar, (obtained from the bituminous coal, in the process of gas making) is let into the boilers from an immense vat overhead, and a great force applied to it by means of a force-pump worked by steam. After six or eight hours from the commencement of the operation, the solution is drawn off into a vat below, from which it is pumped up to the one above, ready to be again used. The ends of the boilers are then taken off, and the timber drawn out all together.

**APPRECIATION OF AGRICULTURAL PUBLICATIONS.**—E. NEWTON, Esq., in his address before the Mahoning county, (O.) Agricultural Society, observes:—"Agricultural publications are the best and cheapest mode of obtaining information upon all subjects of husbandry. They cost but little, and are within the power of all. One good day's work will pay for one, and all have an abundance of time to read them. They contain the experience and observations of the most scientific farmers in the country; the prospects of crops in all countries, and the condition of the market; facts all important to be known and understood. I have been surprised to see how few are taken, and have often been told by farmers that they were not able to pay for them. I can hardly appreciate the remark. Every one is able to pay for that which will immediately return them an hundred fold. I believe that a single number of any of the publications, if thoroughly read, would be found to contain some fact, if adopted, that would more than pay for the full year. By raising an extra bushel of wheat, it would pay for the year."

**POTATO DISEASE IN ENGLAND.**—The last accounts received from England state this malady had made its appearance in many districts, and that the loss of a considerable portion of the crop was inevitable. Accounts from Ireland, also, state that the disease had appeared there in many instances.

**SMALL POX IN SHEEP.**—A disease called *variola ovina*, or sheep pox, has appeared in many flocks in England, and already occasioned great loss. It is said to be both infectious and contagious. The diseased sheep are affected with ulcers, resembling the sores produced by small pox in man. The English veterinarians are giving the closest attention to the disease.

**ANTS AS FOOD.**—White ants, or termites, are eaten by various African tribes, both raw and boiled; and it is said the Hottentots "get into good condition on this diet." In India, the natives capture great quantities of these insects, which they mix up with flour, producing a kind of pastry which is purchased at a cheap rate by the poorer people. Some of the Africans prepare large quantities of them for food, by parching them in kettles over a slow fire. In this condition they are eaten by handfuls as delicious food. The traveller Smeathman states that he often ate them dressed in this way, and



found them to be "delicate, nourishing and wholesome, resembling in flavor sugared cream, or sweet-almond paste." In Brazil, the abdomens of yellow ants are eaten by many persons. Humboldt states that in some of the South American countries, ants are mixed with resin, and eaten as a sauce. In Siam ants' eggs are considered a luxury; they are sent to table curried, or rolled in green leaves, mingled with fine slices or shreds of fat pork. In Sweden, ants are distilled along with rye, to give a flavor to the inferior kinds of brandy. Chemists have ascertained that ants secrete a pleasant kind of vinegar, or a peculiar acid called formic acid. We derive these facts from an article on "Useful Insects and their Products," in the Scottish Quarterly Journal of Agriculture.

**GRUB-EATERS.**—In order to acquire that plumpness which is deemed in the East a beauty, the women of Arabia and Turkey swallow, every morning, three specimens of a grub dug out of the filth of the garden and fried in butter. Turkish women cook and eat a certain beetle in butter to fatten themselves. When an English traveller expressed his surprise and disgust at some Arabs eating insects, the men justly retorted that it was poor affectation in a person who could swallow raw oysters. The first man that ever made the experiment of swallowing a raw oyster must have been a rare brave fellow; but while we thank him for introducing us to this delicious mollusk, we may regret that he did not display his gastronomic courage upon cock-chafers, and other small short-horns. *J. H. Fennell, in Scottish Quar. Jour. Ag.*

**INDIA RUBBER BOAT.**—A correspondent wishes to know whether such an article has ever been used—its cost—and whether it could be had in the city of New-York. Perhaps our friend of the *Spirit of the Times* can answer.

**METHOD OF DISTINGUISHING IRON FROM STEEL.**—Drop a little weak aquafortis on the metal; let it remain for a few minutes, and then wash it off with water. If it is steel, the spot will be black; but if iron, the spot will be whitish grey.

**CREOSOTE** possesses the power of coagulating albumen, and rendering all animal substances imputrescible. It is to this principle that smoke owes its powers in preserving meat.

**THE FIG.**—In countries where the fig is cultivated, certain species of gall-flies are made to assist in ripening the fruit. "The fig consists of a pulp, containing a number of seed-like pericarps, inclosed in a rind. It has no visible flower, for the fruit rises immediately from the joints of the tree, in the form of little buds, with a perforation at the end, but not opening or showing any thing like petals or the ordinary parts of fructification. As the fig enlarges, the flower comes to maturity in its concealment; and in some countries the fruit is improved by a singular operation called *capri-fication*. This is performed by suspending on threads above the cultivated figs, branches of the wild fig, which are full of a species of gall-fly. When the insect has become winged, it quits the wild figs, and penetrates the cultivated figs for the purpose of laying its eggs; and thus it appears both to insure the fructification, by dispersing the pollen, and afterwards to hasten the ripening, by puncturing the pulp, and causing a dispersion or circulation of the nutritious juices."\* A similar effect is sometimes accomplished by puncturing the figs with straws dipped in olive oil.

**KEEPING PUMPKINS.**—Our friend Dr. HOLMES, of the *Maine Farmer*, states that he had a pumpkin, of the growth of 1847, presented him on the fourth of July.

\* Vegetable substances used in the Arts.

It had been kept in a dry room where the temperature had not been below the freezing point. If the Doctor will get some seed of the "seven years" pumpkin and raise a lot of that variety, he will find it no rarity to have sound pumpkins on the fourth of July, or at any other time. We have frequently seen those that were four or five years old, and we cannot say how much longer they would keep.

**FRUITFULNESS.**—John Lewis, of Knox county, Ohio, says that in 1834, he set out a young apple-tree of the variety known by the name of Milam, and in 1846, 12 years from the time of transplanting, it bore thirty-five measured bushels of apples. The Milam is a fine variety, cultivated in central and southern Ohio, of medium size, of a greenish color with dull red stripes, and of a mild sub-acid flavor.

#### PRICES OF AGRICULTURAL PRODUCTS.

New-York, Aug. 14, 1848.

**FLOUR**—Genesee per bbl. \$5.37½—Ohio, \$5a\$5.12½  
**GRAIN**—Wheat, per bu., white Ohio \$1.06—red 91 cts.—Corn, round yellow, 68 c — White Virginia 61 cts.—Rye, 70a71c.—Oats, 40a42c. dull.  
**BUTTER**—Orange County, per lb., 15a17c.—Western, dairy, 11a12½ c.  
**CHEESE**—per lb., 5½a7c.  
**PORK**—Mess, per bbl., \$11.37½a\$11.50—Prime, \$8.94a\$9.  
**HAMS**—Smoked Western, per lb., 6a9c.  
**LARD**—in kegs, per lb., 7½a7¾c.  
**HEMP**—American dew rotted, per ton, \$135a\$145.  
**HOPS**—First sort, per lb., 5c.  
**COTTON**—Upland and Florida, per lb., 5a7½c.—New Orleans and Alabama, 5a8½c.

**WOOL**—(Boston prices,) Aug. 12.

Prime or Saxon fleeces, washed per lb.....	42a45 cts.
American full blood fleeces,.....	38a40 "
" half blood do .....	30a32 "
" one-fourth blood and common,.....	28a29 "

There is little doing in salted provisions. Beef is heavy and without sales. There is fair inquiry for butter and cheese of good qualities. The demand for flour and grain is moderate. Cotton is heavy. The wool trade is still dull, and sales light.

#### TO SEEDSMEN AND NURSERYMEN.

**ORDERS** will be received by the undersigned for the purchase and transmission of seeds, plants, shrubs and trees, from the most celebrated French Nurseries, on moderate terms and with despatch. **LIVINGSTON, WELLS & CO.,** 10 Wall-st. New-York, Sept. 1, 1848.—2t.

#### NURSERY OF J. J. THOMAS.

Macedon, Wayne Co., N. Y.

**THIS** Nursery now contains many thousand fine trees, of large, handsome, and thrifty growth, consisting of Apples, Pears, Peaches, Cherries, Apricots, &c., of the best standard sorts, as well as the finest only of new and newly introduced varieties; all of inferior merit being rejected; and in no case are any propagated for sale except those thoroughly proved in bearing.

When purchasers desire, selections of the best for affording a regular succession of fruit through the season, will be made by the proprietor.

A carefully assorted collection of hardy ornamental trees, shrubs, and herbaceous perennial plants, will be furnished at very moderate prices.

Trees for canal and railroad conveyance, will be well packed in bundles, enclosed in strong mats, with the roots mudded and encased in wet moss, so as perfectly to preclude all danger of injury.

All communications, post-paid, to be directed Macedon, Wayne Co., N. Y.

#### TO WOOL GROWERS.

**I** HAVE recently sold my flock of Paular Merino Sheep to A. H. Avery; who has on hand a number of young Paular Bucks for sale. Also, a few ram lambs, sired by a buck from the flock of J. A. Tainter Esq., imported from Europe in 1846. This Buck is of extraordinary size, and his first fleece—well washed and free from gum—weighed near 10 lbs.

It is believed the lambs, from this splendid young buck, will exceed in size and amount of wool, even those heavy fleeced Paulars, which I have heretofore sold. Orders addressed to A. H. Avery, Galway, Saratoga county, N. Y., will be promptly attended to.

Aug. 1, 1848.—1t.

R. A. AVERY.

#### ASHES FOR SALE.

**THE** subscriber has on hand at his Soap and Candle Manufactory in Cabotville, situated a few rods from the Railroad, and a short distance from the Connecticut river, Six or Eight thousand bushels of LEACHED ASHES, mostly from hard wood, which are constantly accumulating, and which will be delivered on board a boat, or the cars, on reasonable terms—affording an excellent opportunity for Long Island farmers, or others having access to railroad or water communication, to improve their lands. For further particulars address  
**G. M. BIGELOW,**  
 Cabotville, Mass.  
 May 1, 1848.—6t.

## STRAWBERRY PLANTS.

OF most of the celebrated fine varieties, for sale at the nursery of J. J. THOMAS, Macedon, Wayne Co., N. Y. Among these are the following:—Hovey's Seedling, Large Early Scarlet, Dundee, Prolific Hautbois, Duke of Kent, Black Prince, Boston Pine, Swainstone's Seedling, Myatt's Eliza, Hudson Bay, Red and White Alpine, &c. A part can be furnished in quantity at 75 cents to \$1.25 per 100—the remainder at 19 to 33 cts. per dozen. Packages forwarded by Express, and no charge for packing where orders amount to \$3 or more.

Several of the above named varieties, with common culture, usually attain an inch to an inch and a-quarter in diameter, and are of excellent quality. If the roots are immersed in mud when set out, they may, with a few waterings, be transplanted in summer with scarcely a failure; and they should in no case be set later than the first of autumn, that the roots may become well established before winter, and good crops be afforded the next summer.

## GREATEST IMPROVEMENT OF THE AGE.

*Smith's Lever Drill.*

*Patented November 4, 1846, to H. W. SMITH.*

THE advantages of this machine as fully established by use and experiment, are

- 1.—A saving of from two to three pecks of seed per acre.
- 2.—An equal distribution of any given quantity of seed, covered at a uniform depth.
- 3.—A saving of labor; a boy and team, with this machine, can complete from 8 to 10 acres per day; and the surface of the soil is left in such a position that it does not crust, and undergoes a constant course of natural cultivation by the action of every shower, so that the gases and atmosphere readily penetrate,—hence,
- 4.—The grain is not so liable to be thrown out by frost.
- 5.—It stands firmer and stronger, and is not so liable to be injured by rust or the fly.
- 6.—Where these machines have been used, the saving of seed and increase of product, amounted to from 20 to 25 per cent.

The great improvement in this machine, over all others of the kind is its simplicity, durability and economy, and the facility and certainty with which it can be set or altered by a regulated index and gauge to drill or plant any given quantity of grain per acre, at any given depth.

These machines are now being made at Syracuse.

County rights to man-ufacturers sold on reasonable terms.

For further particulars address the undersigned, post paid at Syracuse. C. MASTEN,  
Aug 1, 1848.—3t.

## FARM FOR SALE.

THE Subscriber offers for sale his farm situated in the town of Ghent, Columbia county, N. Y. 10 miles from Hudson, on the Hudson and Berkshire Railroad, four miles south of the Chatham Depot on the Western Railroad,  $\frac{1}{4}$  mile east of the Union Turnpike, and 7 miles from the village of Kinderhook.

This farm contains 234 acres, 40 acres of which is covered with good timber. The whole is well watered by streams and never-failing springs, and in a high state of cultivation. On the premises is a large dwelling house, nearly new, built in the very best manner, and replete with every convenience. The out-houses, consisting of a large barn, sheds, carriage houses, &c. &c., are in good condition. The fences, consisting chiefly of stone wall, (built with stone from a quarry on the premises,) are in excellent order. The soil is free from stone, is easy of tillage, and bears as high a reputation for productiveness as any in the Empire State. For terms and further particulars enquire on the premises.

TOBIAS L. HOGEBOM.

Ghent, July 13, 1848.—2t.

## WHEELER'S PATENT HORSE POWER AND THRESHER.

THE above machines having attained a wide introduction among all classes of Farmers and Mechanics, and having without exception, given the fullest satisfaction, we do not hesitate to recommend and warrant them to any and all wishing such machinery. For prices, particular recommendations, &c., see the Albany Cultivator for February, 1847 and 1848, also for May, 1848. Also Catalogue, gratis, at Store, Nos. 10 and 12 Green St., Albany, or by mail.

HORACE L. EMERY.

General agent for the manufacturer, wholesale and retail.

## EAGLE PLOWS.

NO Plow has been so long before the public with so few alterations, come into so general use, or received so many and so high grade premiums, as the genuine Eagle Plow, made by the inventors, Messrs. Ruggles, Nourse & Mason.

Notwithstanding the great diversity of soils, modes of culture, and the constantly increasing competition, and being subjected to the most thorough and persevering trials ever had in this country, the Eagle Plow still stands at the head of the list for excellence of work, materials, durability, workmanship, ease of draft, and price.

Some of its merits over other kinds in use, are that the metal is of such a mixture of irons as gives them strength equal to malleable iron and admits of the chilling process on all the wearing parts, which causes them to wear sharp, and do three to five times the amount of work, as the ordinary kind of plow casting—while the risk of breaking is not increased by the process.

All sizes of the above plows constantly on hand at wholesale and retail, at manufacturer's prices, at the Albany Agricultural Warehouse, Nos. 10 and 12 Green St., Albany. All plows warranted.

For prices description, &c., see Catalogue, gratis at Store or by mail. H. L. EMERY.

## BURRALL'S SHELL WHEEL PLOW.

THESE Plows run *thirty per cent lighter* than the common plow, and work well on all soils, in all conditions.

An impression has gone abroad that they answer only "on smooth lands where there are no stones, or other obstructions." Such is not the fact—they make good work on all lands, rough or smooth, and are more fully appreciated among roots or stones, and on stiff clay, and hard gravelly soils. Two thousand of them have been in use during the last three years among our best farmers, and give entire satisfaction.

For sale wholesale and retail (warranted) an assortment of the above (from No. 3 to 12) capable of turning a furrow of from 10 to 20 inches wide, and from 6 to 14 inches deep. A liberal discount to dealers.

E. J. BURRALL.

Geneva, April, 1848.—6t.

## HYDRAULIC RAMS.

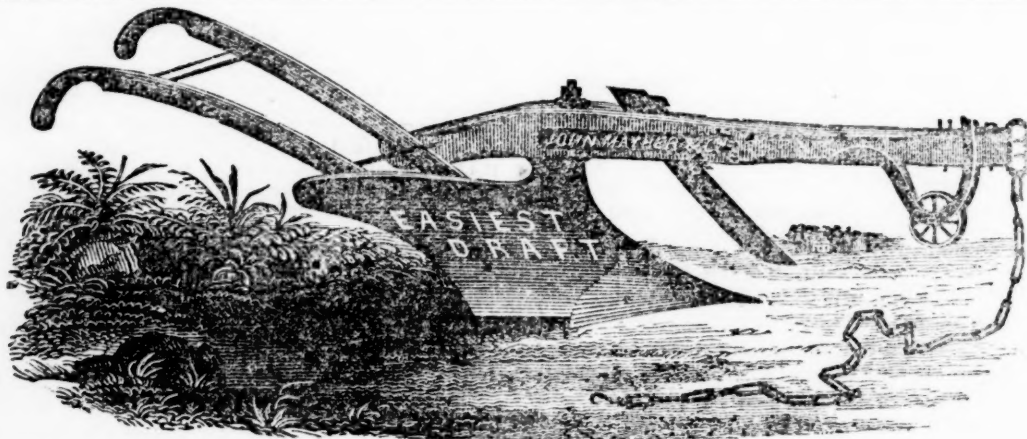
A COMPLETE assortment of these useful machines constantly on hand at the Albany Agricultural Warehouse, where one in constant operation may be seen. H. L. EMERY.

See the following Certificate.

I have used the Improved Hydraulic Ram since the latter part of October, 1847, and can recommend the same to all who may wish to be supplied with running water in a permanent and durable manner. The distance from my spring to my house is 56 rods; the elevation about 70 feet; the fall from the spring to the ram is 6 feet. I have more than enough water from a half-inch pipe to supply my house, and to water 50 head of cattle, and would not be deprived of the same for double what it cost.

CLARK LEWIS, 2d.

German, Chenango Co. N. Y., April 15, 1848.



JOHN MAYHER & CO.,

United States Agricultural Warehouse, 195 Front, one door south of Fulton Street, New-York City,

WHERE they have for sale over 200 different patterns and sizes of Plows, of the most approved kinds, and suitable for all kinds of soil, together with the most extensive assortment of Agricultural Implements ever offered for sale in the city of New-York, which will be sold at lower prices than they can be purchased at any other establishment. Purchasers will do well to call and examine their

stock before purchasing elsewhere. Among the plows advertised will be found J. Mayer & Co.'s celebrated and unequalled First Premium Plow, without doubt the best and cheapest plow to be had in the United States.

N. B. Castings of all kinds made to order.  
New-York, August 1, 1848.—1f.



## THE PLOW, THE LOOM AND THE ANVIL.

**A**N Agricultural Journal published monthly in Philadelphia, (as successor to the Farmer's Library,) by G. B. ZIEBER & Co., edited by J. S. SKINNER & Son.—Terms, five copies for \$10, two copies for \$5, and three dollars for a single subscription. The object of this Journal, as its title indicates, is to discuss and disseminate, with zeal and earnestness, not only the philosophy and practice, but also the political economy of American Agriculture. It is designed to convince the Farmer and the Planter, that encouragement and preference of American over foreign labor, in every branch of industry for which we have the climate and materials, is a question which interests the cultivators of the soil above all classes of people; and to show that what American Farmers most need now, is not so much instruction how to use the plow, but how and by what policy we can have the greatest number of thriving consumers, demanding here at home, the products of the plow. In a word, "THE PLOW, THE LOOM, AND THE ANVIL," is designed to show that, instead of a precarious dependence on ever fluctuating and uncertain foreign markets, as recommended in reports and speeches published and widely disseminated by the General Government, and by the New-York State Agricultural Society, our best and surest reliance under a wise policy, would be, on the home market, by giving fair and steady encouragement to American Industry, employed, and consuming at home, the products of American Husbandry.

In this earnest undertaking to propagate, what is believed to be the true conservative doctrine, the Editors have the countenance and good will of many of the most highly gifted and patriotic men of our country. Mr. Skinner is giving to it all his time and abilities, and relying on its success exclusively, as his only means of support. All he asks is that those who wish it success, will subscribe at once; and those who are opposed to his views will read attentively and judge as impartially as fixed opinions will allow.

Of all improvements in practical agriculture, and in the structure of the implements employed in it, the reader will be kept advised. The editors solicit "aid and comfort" from all the friends of domestic industry, in all its forms: not to be rendered as to the "agitators" in favor of free trade, in hard money, gratuities by thousands and hundreds of thousands, but by two neighbors in a V, and by clubs of five in a X.

Now among the oldest of the Editorial Fraternity, he will feel greatly obliged to any one of them who will give this one insertion, as it is kindly done here. Editors and Publishers take the risk of the mail. No formality is necessary, except to say—J. S. Skinner & Sons, or G. B. Zieber & Co., Philadelphia. \$5 enclosed for two subscriptions. A. B. ——— Post Office. C. D. ——— Post Office.

Or, in this wise \$10 for five subscribers and their address.

## STRAWBERRY PLANTS.

**H**OVEY'S Seedling, Boston Pine, Large Early Scarlet, Crimson Cone, (one of the most vigorous, prolific and best), Hudson's Bay, Victoria, Bishop's Orange, 75 cents per 100, cash, for quantities not less than 500 plants in the whole, nor less than 100 plants of a variety carefully packed and forwarded as directed—Other varieties specified in our catalogue, at a reduction of one-third from the catalogue prices, when not less than 500 plants in the whole are ordered. Also the following new Ohio varieties; Burr's Seedling, 50 cts. per doz. \$2.00 per 100 Burr's Mammoth, 1 50 per doz. Burr's New Pine, \$1 50 per doz Taylor's Seedling, \$1 00 per doz., \$1 00 per 100. Hudson of Cincinnati, 37½ cts. per doz. \$1 50 per 100. Turner's Pine, (Montevideo Pine of France,) 75 cts. per doz. Also, the

## ABERDEEN BEEHIVE STRAWBERRY,

Strong plants, well rooted in small pots, and carefully packed in a box for distant transportation; price \$5 00, cash with the order, for 18 plants, including package. We imported our stock direct from Mr. Mathewson, of Aberdeen, Scotland, who originated this variety, and their genuineness may therefore be depended upon. Descriptive catalogues gratis on application, post paid.

Flushing, L. I., Sept. 1, 1848.

WINTER & CO.

## GRANT'S PATENT FAN-MILLS.

**I**T GRANT & CO., Junction, Rensselaer county, N. Y., continue to manufacture these celebrated mills. They have been awarded five first premiums at the New York State Fairs and the Fairs of other States, and in no instance has any other mill of the kind received a premium over them. The manufacturers feel confident, therefore, in offering these mills to the public, that they are the best in use. During the last year they were introduced into England, by Mr. Stocum, of Syracuse. They were very favorably noticed by the English papers; and from a communication of Mr. S's, published in the Transactions of the N. Y. State Ag. Society for 1847, it will be seen that they were tried by several large farmers, and highly approved. One farmer, it is stated, set aside an almost new winnowing machine, for which he paid £18. (\$90) and used Grant's for cleaning a crop of 300 qrs. (2,700 bushels) of wheat, and several hundred bushels of mustard seed. We have lately made some valuable improvements in the article, though the price remains as before. Our agents are H. L. Emery, Albany; G. S. & F. A. Wallis, Pittsfield, Mass.; Parsons & Dickinson, Springfield, Mass.; John Mayher & Co., 115 Front Street, New-York; Benj. Myers, Newark, N. J.; S. & E. Hasbrook, Stone Ridge, N. Y.; James S. Brown, Newburgh, N. Y.; H. Warren, Troy; Hugh Van Alstyne, Kinderhook; S. & M. Peekham, Utica; E. Whitman, Jr., Baltimore, Md.; Fitzhugh Coyle, Washington, D. C.; Denison & Webster, Savannah, Geo. Address I. T. GRANT & Co., Junction, P. O., Rensselaer county, N. Y., by whom all orders will receive prompt attention. Sept. 1—4t.

## HUDSON AG. WAREHOUSE &amp; SEED STORE, FURNACE BUILDINGS, HUDSON.

**T**HE Subscriber offers for Sale, all kinds of FARMING IMPLEMENTS and TOOLS, GARDEN and FIELD SEEDS, on as good terms as at any other establishment.

Horse Powers, single and double Threshing Machines, with or without Separators, Plows of all kinds, including D. Prouty & Co's Centre Draft; sub-soil and side-hill Plows, Road Scrapers, Cultivators, Seed Sowers, (Pratt's), Straw Cutters, of various patterns, Kendall's Churns, Endless Chain Dog-Churns, Corn and Cob Crushers, Iron Rakes, of all sizes, Hay Forks, Manure Forks, Shovels, Spades, garden and field Hoes, Grant's Fan Mills, Scythes and Snaths, Ox Yokes and Bows, Ox Balls, Bull Rings, Grain Cradles, Grass Hooks and Shears, Bill Hooks, Scythe Stones, &c. &c.

F. A. GIFFORD.

Hudson, May 9, 1848—5t\*

## IMPROVED STOCK FOR SALE.

**T**HE subscriber will take orders and execute them in the best possible manner, for—

Durham, Hereford, Devon and Ayrshire cattle. Price from \$50 to \$300 each, according to age and quality.

Saxon, Merino, Southdown, Leicester, and Cotswold sheep. Price from \$10 to \$30 each.

China, Sussex, Berkshire, and Lincoln pigs. Price per pair at three months old for the three first mentioned breeds, caged and delivered on board ship, \$20. Price of the Lincolns, \$30 per pair. These last are of a recent importation—color white, and grow very large.

All orders must be accompanied with the cash.

mjulysept.

SAMUEL ALLEN,  
189 Water-street, New-York.

## SELLING OFF.

**L**INNEAN BOTANIC GARDEN & NURSERY. Late of Wm. Prince, deceased, Flushing, L. I., near New-York. WINTER & Co., Proprietors. In consequence of the decease of the Junior, and of the advanced age of the surviving Partner, who therefore intends to relinquish the business, the entire stock of this establishment, comprising every description, including the newest and choicest varieties of fruit and ornamental Trees, Shrubs, Vines and Plants, Roses, Greenhouse plants, Box Edging, &c., will be disposed of in lots to suit purchasers, at very reduced prices, in order to close the business as speedily as possible.

Orders accompanied with the cash, to the amount of ten dollars or upwards, will be supplied at a reduction of 25 per cent. from the usual prices.

Nurserymen, venders, and others wishing to purchase by whole sale, will be supplied at such reduced prices according to quality and quantity, as will probably prove satisfactory to them. Young stock, both in the Fruit and Ornamental departments, supplied very low by the quantity.

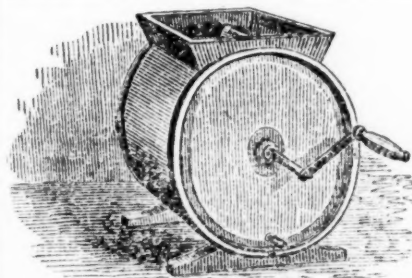
An opportunity is afforded to Amateurs and Nurserymen to obtain extra sized and many new and rare specimen fruit and ornamental trees, shrubs and plants, at very moderate prices.

Extra sized ornamental and shade trees for streets, lawns and parks, low.

The establishment, now in the highest order and densely stocked, will be disposed of upon liberal terms, offering from its location, celebrity, saleable stock, greenhouses, dwellings, and other conveniences for conducting the business, very superior advantages to any person disposed to pursue it.

It is requested that letters of enquiry, &c. be post paid. Descriptive Catalogues gratis.

August 1, 1848.—2t.



**"KENDALL'S CHURN."** The sale of this Churn has been unequalled in the history of Churns. As they are all warranted to work to the satisfaction of purchasers, there is little risk in trying them.

For prices, see Catalogue of Agricultural Warehouse gratis at Store, Nos 10 & 12 Green-street, Albany, New-York, or by mail.

H. L. EMERY.

## IMPORTANT TO FARMERS, GARDENERS, AND FLORISTS.

**A New Manure, Warranted Superior to any Other.** MR BOMMER has on hand one hundred casks—500 lbs. each—of the celebrated "French Guano," an inodorous chemically prepared fertilizing Powder, adapted to every soil and all plants, and acknowledged in Europe as the best and most profitable manure ever known. Price of a cask, \$5.

Families having small gardens or flowers, can be supplied with small bags containing 15 lbs. at 25 cents, or 36 lbs. at 50 cents, at his office 72 Greenwich-st., New-York city. April 1—4t.

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For sale at the Office of the Cultivator:

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## THE HORTICULTURIST

AND

## JOURNAL OF RURAL ART &amp; RURAL TASTE.

EDITED BY A. J. DOWNING, Esq.

**PUBLISHED** at the office of the Cultivator, Albany, N. Y., by LUTHER TUCKER, at \$3 per year.—Two copies for \$5. Vols. 1 and 2, completed with the June No. 1848, now ready for sale, either bound, or in paper covers to send by mail.

*Contents of No. 2, Vol. III—for Aug., 1848.*

A Chapter on Roses—The Wistaria Sinensis; Remarks on New Strawberries—Strawberry Culture and selection of varieties—The Geranium and its Culture—Remarks on the Culture of Native Grapes—New Mixture to Drive away Insects—New or Rare Fruits that have proved Excellent—Prof. Shepard on Agricultural Schools—Transactions of the New-York State Agricultural Society, for 1-47—The Onondaga Pear on Quince Stocks—Belle Magnifique Cherry—Cutting out the Fire Blight—Garden Culture of Indian Corn—Fruit Culture at the South—German Greens or Siberian Kale—Horticulture in Carolina—Mr. Lon. worth's reply to Mr. Prince—Pomological Queries—New-Haven and Albany and Rensselaer, Horticultural Societies—Bugs on Vines—The Strawberry Question Again—New-York Strawberry Market—Answers to Correspondents—Proceedings of the Massachusetts, and Pennsylvania Horticultural Societies.

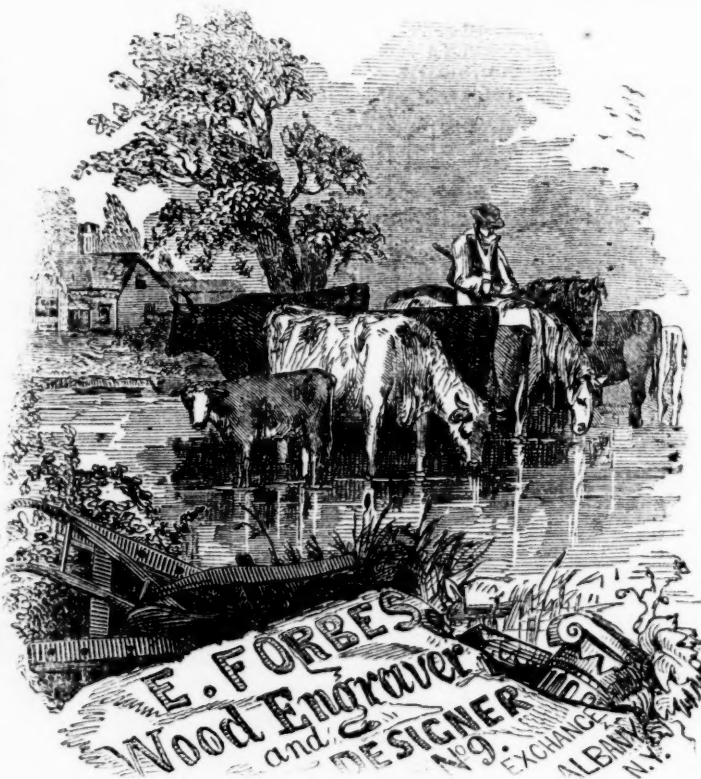
**ILLUSTRATIONS—Frontispiece.**—Souvenir Le Malmaison Rose.—The Geranium—Large Early Apricot—Burr's New Pine Strawberry—Butcher's Yellow Cherry—Cherry Currants.

**THE HORTICULTURIST**—We invite the attention of the reader to the prospectus of the Horticulturist, published in another column. It is decidedly the best periodical of the kind now published, and should be in the hands of every nurseryman and fruit-grower in the country. We have been an attentive reader of the Horticulturist since it was commenced and can heartily recommend it to the favorable consideration of the public.—O. Free Press.

"The Horticulturist," for June, is the last number of the second volume, and a new volume commences in July. We earnestly recommend this variety to all who desire to increase their qualities of fruit. The time is not far distant when the cultivation of good fruit in this region, will be deemed the most profitable product of the soil. Raising poor fruit is a useless waste of the soil.—Vt. Phoenix

**THOMAS' FRUIT CULTURIST,**

*For Sale at the Office of the Cultivator.*



## MERINO SHEEP FOR SALE.

HAVING arrived at a point in which I desire to reduce my stock of Sheep, I have therefore concluded to sell about 600 Merino Sheep this fall, which have been bred with great care, and are inferior to none in the United States—200 of which are half bloods, from the importation made by Mr. Taintor. Nothing need be said to recommend them, for they recommend themselves.

Cornwall, Sept. 1, 1848.—31.

A. L. BINGHAM.

## FINE DEVON CATTLE FOR SALE.

THE Subscriber will offer for sale at the show of the Hartford County Agricultural Society, to be held at Hartford on the 12th October next, a portion of his herd of Pure Devon Cattle, as follows:

1 Bull, 4 yrs old 22th June last, a very superior animal, bred by Lewis F. Allen, Esq., of Black Rock; has been awarded the first premium for three years in succession at the Fair of the Am. Institute.

2 Full blood cows or heifers.

3 or 4 Spring Calves.

The above stock was derived principally from the herds of Lewis F. Allen, Geo. Patterson of Md., and R. L. Colt, Esq. of N. Jersey, having recently purchased his entire herd.

Full Pedigrees of the stock will be shown at the Fair.

Farmington, Sept. 1, 1848.—11

WM. L. COWLES.

## SALE OF SHORT HORNED CATTLE.

I WILL sell at Buffalo, during the days of the State Fair, on the 5th, 6th and 7th September next, under the directions of the Officers of the New York State Agricultural Society, Twenty to Twenty-five thorough bred Short Horned Cattle, consisting of Cows, Heifers and young Bulls. A catalogue with their pedigrees will be ready at the time of the fair.

Also, I will sell at the same time, Fifty Merino Rams, bred from the Blakeslee flock, and Six South Down Rams.

References—A. B. Allen, N. York; Sanford Howard and B. P. Johnson, Albany; Francis Rotch, Butternuts; and L. F. Allen, Black Rock.

JOHN M. SHERWOOD.

## THE CULTIVATOR

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